0 2007 0530551 0
California State Library

Digitized by the Internet Archive
in 2012 with funding from
California State Library Califa/LSTA Grant

http://www.archive.org/details/railroadpamphlet05cali

Rail Road Pamphlets Vol. 5.

1 Judah, Theadore D.
Central Pacific R.R.
Construction cost &c Report_

2 Conkling, Edgar_
Benton's policy of selling
& developing Mineral lands_

3 Denver, and Rio Grande Railway, First, Annual, Report_
April 1, 1873_

4 Pattison, Hon Robert E
Discrimination, by R.R.

5 Corthell, Elmer L.
The Atlantic, and Pacific
Ship Railway_

6 Atchison, Topeka, & Santa Fe R.R.
Sixteenth Annual Report
Dec 31, 1887

CALIFORNIA STATE LIBRARY

7 ———— Seventeenth annual
Report Dec 31-1888

8 Gowen Franklin B.
The Standard Oil, Monopoly cases —

9 Pattison Rob E.
Extracts from Report of the U.S. Pacific Railway Commission 1888

10 San Francisco And North Pacific, Railway Co. second Annual Report — 1891
(map removed 4-82)

11 San Francisco, And North Pacific Railway Co,
Arguments against, adoption of amendments, introduced
Jan 11—1893 —

12 Romero Matias,
Tehauntepec Isthmus Railway

13 The Central Pacific R.R. Debt
California's remonstrance against refunding —

[illegible]

Railroad pamphlets

REPORT

OF THE

CHIEF ENGINEER

ON THE

PRELIMINARY SURVEY

AND

COST OF CONSTRUCTION

OF THE

CENTRAL PACIFIC RAILROAD,

Chief engineer

OF

CALIFORNIA,

INV. 1898

ACROSS THE

SIERRA NEVADA MOUNTAINS,

FROM

SACRAMENTO TO THE EASTERN BOUNDARY OF CALIFORNIA.

SACRAMENTO, OCTOBER 1, 1861.

CALIFORNIA STATE LIBRARY

REPORT

OF THE

CHIEF ENGINEER

ON THE

PRELIMINARY SURVEY

AND

COST OF CONSTRUCTION

OF THE

CENTRAL PACIFIC RAILROAD,

OF

CALIFORNIA,

ACROSS THE

SIERRA NEVADA MOUNTAINS,

FROM

SACRAMENTO TO THE EASTERN BOUNDARY OF CALIFORNIA.

SACRAMENTO, OCTOBER 1, 1861.

OFFICERS

OF

CENTRAL PACIFIC RAILROAD COMPANY,

OF

CALIFORNIA.

President,

LELAND STANFORD, Sacramento.

Vice-President,

C. P. HUNTINGTON, Sacramento.

Treasurer,

MARK HOPKINS, Sacramento.

Chief Engineer,

THEO. D. JUDAH, Sacramento.

DIRECTORS:

LELAND STANFORD, Sacramento;
C. P. HUNTINGTON, Sacramento;
LUCIUS A. BOOTH, Sacramento;
CHARLES CROCKER, Sacramento;
JAMES BAILEY, Sacramento;
MARK HOPKINS, Sacramento;
THEO. D. JUDAH, Sacramento;
D. W. STRONG, Dutch Flat;
CHARLES MARSH, Nevada.

REPORT.

ENGINEER'S OFFICE,
CENTRAL PACIFIC R. R. OF CALIFORNIA.
SACRAMENTO, October 1, 1861.

TO THE PRESIDENT AND DIRECTORS OF THE CENTRAL PACIFIC RAILROAD COMPANY OF CALIFORNIA :

GENTLEMEN—Agreeably to your instructions, I have completed the preliminary survey of a Railroad across the Sierra Nevada Mountains, from the city of Sacramento to a point on the Truckee River, at the eastern base of mountains ; the results of which, confirm the facts established by the barometical reconnoissance made last fall.

A preliminary examination was made, and barometrical observations taken last fall upon three routes—one through Eldorado county *via* Georgetown, another *via* the present route (Illinoistown and Dutch Flat), and the third *via* Nevada and Henness Pass.

These observations demonstrated the existence of a route from Sacramento across the Sierra Nevadas, by which the summit could be attained with grades of 105 feet per mile ; accordingly, field parties were organized early in the spring, and a thorough Railroad Survey made, the results of which are embodied in the following Report, developing a line with lighter grades, less distance, and encountering fewer obstacles than found upon any other route or line hitherto examined across the Sierra Nevada Mountains ; and proving, by actual survey, that the difficulties and formidable features of this range can be successfully overcome for Railroad purposes.

Among the objectionable features which render the Sierra Nevada Mountains formidable for Railroad operations, are found—

FIRST. THE GREAT ELEVATION TO BE OVERCOME IN CROSSING ITS SUMMIT, AND THE WANT OF UNIFORMITY IN ITS WESTERN SLOPES.

It will be observed that in crossing a summit of 7000 feet in height, an average grade of 100 feet per mile, can only be attained, with a distance or base of 70 miles. Should any irregularity of surface occur in this distance, the grade would be correspondingly lessened or increased, in conformity with such irregularity of surface.

When it is considered that the average length of the western slope of Sierra Nevada Mountains, from summit to base, is only about 70 miles, and the general height of its lowest passes about 7,000 feet, the difficulty of locating a Railroad line with 100-feet grades is correspondingly increased, as it becomes absolutely necessary to find ground upon which to preserve a general uniformity of grade.

In the present instance, the distance from base to summit, by Railroad line, is 81 miles ; the elevation of summit 7,000 feet above Sacramento, and the maximum grade 105 feet per mile ; showing a remarkable regularity of surface, without which the ascent could not have been accomplished with our maximum grades.

SECONDLY. FROM THE IMPRACTICABILITY OF RIVER CROSSINGS IN THE MOUNTAINS.

To those unacquainted with the mountain topography of the western slope of the Sierra Nevadas, and accustomed to the lesser elevations and gentler slopes of the Atlantic States, it would be difficult to convey an adequate idea of the extensive proportions of the irregularities of surface which attach to these mountains.

The general course of the Sierras is north-westerly, and parallel to the line of Pacific coast.

This western slope being at right angles, extends therefore in a south-westerly direction, which is the general course or direction of the rivers and streams upon its western slopes.

Between a point opposite the city of Sacramento (about latitude 38½) and Shasta (about 41 degrees), this western slope is intersected by numerous rivers, having their sources near the summit of the Sierras. They are as follows : The South Fork of American, Middle Fork and North Fork, Bear River, Deer Creek, South Fork of Yuba, Middle Fork, North Fork, the South, Middle and North Forks of Feather River.

These rivers run through gorges or canons, in many places from 1,000 to 2,000 feet in depth, with side slopes varying from perpendicular to an angle of forty-five degrees.

The ridges formed by these rivers are sharp, well defined, and in many places so narrow on top, as to leave barely room for a wagon road to be made without excavating the surface of ridge.

The branches, also, of many of these rivers have worn out gorges as deep as those of the rivers, and present physical barriers to a line of communication either crossing them, or extending in a northerly and southerly direction.

These rivers are generally made the dividing lines between mountain counties, which are of oblong shape, long and narrow; the counties of Eldorado, Placer, and Nevada, extending from base to summit of Sierra. The thoroughfares of travel extend into these counties along these ridges; the focus of travel for the large counties of Eldorado, Placer, Nevada, and Sierra, being Sacramento (a portion of this travel, however, concentrating at Marysville).

No wagon road exists across the Middle Fork of the American. The inhabitants of Eldorado county, in order to reach the divide between Middle and North Fork of the American, by wagon, are obliged to proceed down to within eight or ten miles of the Sacramento valley, in order to obtain a crossing.

The towns of Forest Hill, Yankee Jim's, Todd's Valley, Michigan Bluffs, Bird's Flat, Sarahsville, &c., lying in the divide between the North and Middle Forks of the American, are reached by crossing the North Fork, about four miles above Auburn, at which point the road is excavated on the face of a steep side-hill above the river canon, which is about 1,000 feet high, closely following its bends and sinuosities; the hill upon each side being about four miles in length, or a total of eight miles in length; the grade for wagon-road varying from 250 to 300 feet per mile.

Iowa Hill and Wisconsin Hill, although upon this same divide, are separated from the above-mentioned towns by two or three canons or branches of the North Fork, running nearly parallel.

One of these canons is deeper and more precipitous than the crossing of North Fork, above Auburn; the descent into the canon being about one thousand five hundred perpendicular feet. A wagon-road, wide enough for a single team, with occasional turning-out places, has been built across, but a distance of ten miles of road is rendered necessary in order to reach across a direct line of about three miles, the grades being between three hundred and four hundred feet per mile.

From Iowa Hill to Illinoistown and Nevada, the canons of Bear River, of Steep Hollow, Greenhorn, Wolf Creek, and Deer Creek, intervene.

Above Nevada, the South, Middle, and Main Yuba also intervene.

The present traveled stage road from Nevada to Eureka, &c., crosses South Yuba about eight miles from Nevada, the road descending in about two miles one thousand feet, and in the next five miles ascending two thousand feet, to the top of ridge.

Thus it will be seen, that in order to reach the summit of Sierra Nevada, a Railroad line must avoid the crossings of any of the canons; for were it even practicable to follow down into them with a grade of one hundred feet per mile, it would still be necessary to retrace the line upon the opposite side, which would involve (in a canon of, say, one thousand feet in depth) the additional length and cost of twenty miles of line of maximum grade, with the crossings of side ravines and tributaries.

The *present line* pursues its course along an *unbroken ridge, from base to summit, of Sierras*, the only river crossing in the mountains being Little Bear River (a tributary of Main Bear River, about three miles above Dutch Flat), which is crossed at an elevation of fifty feet, and will require only about fifty feet span of bridge.

THIRDLY. IN ITS ENTIRELY AVOIDING THE SECOND SUMMIT OF THE SIERRA NEVADA MOUNTAINS.

A cross section of the main range of Sierra Nevada presents a profile showing two summits, with a range of elevated table-land lying between; thus, upon the profile of Lieutenant BECKWITH's survey across the Sierra Nevada, *via* Madelin Pass, are shown two distinct summits, thirty-five miles apart, with a range of elevated table-land between them.

The present Placerville wagon-road to Washoe also crosses these two summits; passing the first range *via* Johnson's Pass, it descends into Bigler Lake Valley, and ascending again, crosses the second summit via Daggett's pass, into Carson Valley.

Lake Bigler lies in this valley between the two summits—is about 35 miles long, and from 12 to 15 miles in width; is entirely surrounded by mountains and lofty peaks, excepting at one point on its western shore, where the Truckee River forms its outlet.

Running at first north-westerly about eight miles, then northerly about ten, thence north-easterly about twelve miles, the Truckee passes down between these two summits with a nearly uniform fall of about thirty-five feet per mile; thence sweeping round to the eastward, it passes through the second range or summit, at a depression where it seems to be entirely worn away down to the level of the river, thence pursuing its way through an extensive plain known as the Truckee Meadows; thence through the Washoe Mountains to the Big Bend; thence northerly about twenty miles, finds its way into Pyramid Lake.

At the Donner Lake Pass, where our line crosses the first summit of Sierra Nevada, the altitude of line is about 1,200 feet above the Truckee River. Donner Lake lies immediately beneath, at a depth of 1,000 feet.

Two long side ranges or spurs inclose the lake and its valley, declining in height gradually to the Truckee River, about eight miles below.

Our line is carried down along the side-hill of the spur or range immediately above the lake, and upon its south side to the Truckee River, which point it reaches in a distance of eleven and a half miles of line, with an uniformly descending grade of 105 feet per mile from the summit.

The Truckee thus reached, all further difficulty of location ceases, as it pierces its way through all obstructions with an uniform descent, not exceeding forty feet per mile, to the Humboldt Desert, which forms the sink of the Humboldt and Carson Rivers.

Thus, the second summit of Sierra Nevada and the crossing of the Washoe Mountains are entirely avoided; and from the western base to the summit of Sierra Nevada, the grade is uniformly ascending or level, there being no descending grade going eastward; while from the summit to Big Bend of Truckee or Humboldt Desert, a uniform grade is likewise maintained.

THE PROMINENT FEATURES OF THIS LINE MAY BE BRIEFLY ENUMERATED AS FOLLOWS:

1st. It crosses the Sierra Nevada Mountains, and reaches the Truckee River, in 123, and State line 140 miles from Sacramento.
2d. Big Bend of Truckee, or Humboldt Desert, is reached in 178 miles.
3d. It crosses the State at nearly its narrowest width.
4th. It pursues nearly a direct course from Sacramento to Big Bend of Truckee.
5th. It forms a local road for the counties of Sacramento, Placer, and Nevada.
6th. It commands, and will perform, the entire business of Nevada Territory, Washoe, and the Silver mineral region.
7th. It will also command the business of newly-discovered Humboldt mineral district, Pyramid Lake, Esmeralda, and Mono mineral districts.
8th. It crosses the Truckee Meadows at the head of Steamboat Valley, which, with Washoe Valley and Eagle Valley, connects with Carson Valley, enabling a branch road, with light grades, to be built to any point on Carson River.
9th. It reaches the summit (or an altitude of 7,000 feet above Sacramento), in 81 miles from base of mountain.
10th. It reaches eastern base of Sierra Nevada in 11½ miles from Summit.
11th. It follows the valley of Truckee River, without obstacle, to Big Bend or Humboldt Desert.
12th. It entirely avoids the second summit of Sierra Nevada.
13th. Its maximum grades is 105 feet per mile, or less than those of the Baltimore and Ohio Railroads.

14th. The grades down the Truckee will not exceed 40 feet per mile.

15th. The elevation of line is maintained, continuously, to the summit—there being no down grade running easterly to Summit.

16th. An uniformly descending grade is maintained from the summit easterly to the Truckee, or eastern base.

17th. Encounters no elevated plateau of table-land at Summit.

18th. Running to and from summit with maximum grades, cannot have an extensive snow-line.

19th. Runs through extensive forests of Pitch and Sugar Pine, Fir, Cedar, and Tamarack, which latter two species of timber are abundant, and will furnish excellent cross-ties.

20th. Crosses no deep river canons or gorges.

21st. Its longest tunnel will not exceed 1,350 feet in length, and no shafting will be required.

22d. Shortest radius of curvature, 573 feet.

23d. Navigable waters of the Sacramento River at all seasons of the year its western terminus ; Washoe and the great Basin its eastern terminus.

24th. At Big Bend of Truckee, the line is in position to proceed *via* the Humboldt to Salt Lake, or follow the Simpson route to some point.

25th. *Saving in distance* over route *via* Madelin Pass and headwaters of Sacramento, as surveyed by Lieut. BECKWITH, from Lassers Meadows or Humboldt crossing, 184 miles.

26th. Saving in cost of Pacific Railroad line, taking Lieut. BECKWITH's estimate from Lasseur's Meadows or Humboldt crossing, as compared with cost of present proposed line, in thirteen and one half millions of dollars.

27th. Reduces the time of passenger transit to and from Washoe to 8½ hours. Passengers leaving Virginia station at 5 A. M., will reach San Francisco the same evening.

28th. Saving in cost of transportation of freight to citizens of Washoe or Nevada Territory, one million of dollars per year.

29th. Affords a market for low-class silver ores (now thrown aside), for shipment to Europe, from over 3,000 mining claims.

30th. Is advantageously located for an extension to Oregon.

31st. Completes first western link of Pacific Railroad, overcoming its greatest difficulties.

GENERAL REMARKS CONCERNING LOCATION, AND DESCRIPTION OF RIDGE OR DIVIDE.

This divide is the strip of land lying between the American River and its north fork (on the south), and Bear River and the South Yuba (on the north).

The American River unites with the Sacramento River at the city of Sacramento ; Bear River unites with Feather River (a tributary of the Sacramento) about 30 miles north of the city of Sacramento.

The direction of divide is north-easterly and south-westerly. Its width opposite Sacramento is about 30 miles.

The foot-hills of Sierra Nevada begin at Folsom, on the American, and at Johnson's Ranch, on Bear River ; the line of foot-hills running through or near Lincoln (about 15 miles, northerly, from Folsom, and 10 miles, southerly, from Johnson's Ranch), forming a piece of land in Sacramento Valley, between the foot-hills and Sacramento River, of about 30 miles in length and 20 in width. The ravine of Bear River, from Johnson's Ranch to English Bridge (a distance of about 15 miles), pursues nearly an easterly course, while the course of the ravine of American River, from Folsom, is nearly north, to a point within about 8 miles (south-easterly), from English Bridge. Here the American River branches, and the ravine of its north fork, as well as that of Bear River, pursue a north-easterly course, but gradually approach each other to a point about 4 miles above Illinoistown, called Long Ravine, where the two rivers are less than three miles apart.

At this point occurs the greatest depression on the ridge, and the greatest difficulties in location were found.

From Long Ravine, the ravines of these rivers diverge somewhat, but are scarcely further than six miles apart at any point—the ravine of North Fork and its tributaries and branches continuing up to the summit.

Numerous branches and ravines extend northerly from the North Fork, rendering a location on that side extremely difficult, if indeed practicable, our line at Long Ravine being about 1,200 feet above the bed of North Fork. The ravine of Bear River extends up about fourteen miles above Dutch Flat, widening out near the source of Bear River into a beautiful valley, called Bear Valley, about two miles long and one mile wide. Diminished in size to a small creek, Bear River passes through this valley, and a mile above, is lost among the benches to the right. The ridge between Bear Valley and North Fork of American is about 800 feet high.

Here occurs a singular freak of nature. The South Yuba, augmented by numerous large branches along its course, is seen emerging from impassable rocky canons, and sweeping down through the head of Bear Valley, it turns suddenly to the north, and pierces the ridge or divide lying north of Bear Valley, forcing its way out to the northward, between rocky walls, surmounted by peaks from 2,000 to 3,000 feet high.

There is little doubt that, at some former period, the waters of South Yuba flowed through Bear Valley, and down the ravine of Bear River ; and, indeed, it would be no difficult matter, to turn the whole volume of South Yuba into Bear River at the present time.

The South Yuba Canal Company, who supply the Nevada divide with water for mining purposes, take their water from the South Yuba, at the head of Bear Valley, bringing it down through Bear Valley by the side of Bear River, with a grade of about ten feet per mile, being, at points, as near as 200 feet to Bear River, and not over fifteen or twenty feet above it. Thus, it will be seen, that the canon of Bear River becomes, and is the same as that of the South Yuba, which latter river now takes its place, the divide or ridge being now bounded by North Fork of American on the south, and South Yuba on the north.

The ravine or valley of South Yuba continues on to the summit of Sierra Nevada, and in Summit Valley, within two miles of Summit, the river is a larger stream than is Bear River in Bear Valley.

A barometrical examination of this route indicated that the top of ridge or divide could be reached at Clipper Gap, near the head of Dry Creek, 48½ miles from Sacramento. From this point to Resevoir Gap (about 1½ miles above Dutch Flat, and 25 miles from Clipper Gap), it was found that the line must be carried on the top of ridge.

The line of top or crest of ridge being far from uniform, of course the lowest points or gaps in ridge become commanding points, and it was found necessary to carry the line from gap to gap, passing around the intervening hills, upon their side slopes.

It was also found, upon reaching New England Gap (near the New England Mills, about six miles from Clipper Gap), that to Long Ravine, a distance of eight miles, the ridge was nearly level, the elevation of grade at Long Ravine being only about 100 feet higher than at New England Gap.

Also, that the ridge rose rapidly from Long Ravine, eastward to the next gap (called Secret Ravine Gap).

It was also found that from Resevoir Gap (1½ miles above Dutch Flat) the ridge rose too rapidly for one maximum grade, and that for the next 20 miles, to the bottom or valley of Yuba, the line must be carried on the main slope of Bear and Yuba Rivers. It was thought, however, that the line could be carried up Canon Creek (a tributary of North Fork, with tolerably smooth side slopes), to Dutchman's Gap, about eight miles above, and there cutting through the gaps, brought out on to Bear River side-hill.

Subsequent examination proved this to be impracticable. Canon Creek rising too rapidly for our grades, we were therefore compelled to carry the line immediately on to Bear River side-hill, and were fortunate enough to be able to avail ourselves of the side-hill of Little Bear River for that purpose.

Being on the top of ridge at Resevoir Gap, we were enabled to cross Little Bear River near its head, and to use its side-hill for an approach to Main Bear River.

The barometrical elevations also indicated that the Yuba could be reached about twenty miles above Dutch Flat, at the head of its canons, and the line carried along up its smooth, uniform bottoms for some distance ; then, by taking to its south side-hill, Summit Valley and Summit reached with maximum grades.

The South Yuba, from this point (twenty miles above Dutch Flat), called Yuba Bottom, extends to the summit, a distance of sixteen miles, most of the way through a valley, in some places 500 or 600 feet wide. The old Truckee emigrant trail follows down through the valley a portion of this distance, generally over a smooth natural road.

Were the fall of this river evenly distributed, it would afford a uniform grade of a little less than 100 feet per mile to the summit.

Rising, however, from Yuba Bottom (say half a mile at a grade of fifty feet per mile), the river canons for half a mile at a steeper grade ; thence for four miles its grade is about sixty feet per mile ; it then canons, rising about 250 feet in a mile, at a point called Slippery Rock Canon.

The river then rises gently for about three miles, and again rapidly for three miles, to Summit Valley.

Through Summit Valley (a distance of two and a half miles) its grade is scarcely twenty-five feet per mile, then rises rapidly again to the summit.

Inasmuch as the indications of altitude of the aneroid barometer proved lower than those of the true level, after continuing our line for six miles along Yuba Bottom, we were obliged to retrace our steps and commence again near Yuba Bottom, running up on south side-hill of Yuba, with maximum grade, into Summit Valley, in order to attain a sufficient elevation to reach the summit.

Summit Valley is a beautiful valley, near the source of the Yuba, about two and a half miles long and three-quarters of a mile wide, yielding excellent pasturage for cattle, hundreds of which are driven there each summer.

From the summit, looking easterly, you appear standing upon a nearly perpendicular rocky wall, of 1,000 feet in height.

Immediately below is seen a valley, from one to two miles wide, extending up from the Truckee River to nearly beneath your feet. Donner Lake (about three and a half miles long, by one mile in width) occupies the upper portion of this valley, and its outlet is seen pursuing its course down to a junction with the Truckee. Two long ranges or spurs are seen, on either side, parallel with and inclosing the lake, reaching from the summit to Truckee River. Immediately beyond the river is seen the second summit of Sierra Nevada, while still further in the distance the Washoe Mountains are plainly visible.

Passing the summit, our line is carried down upon the side-hill of the range, on south side of Donner Lake, descending with the maximum grade for about eleven miles.

The distance, in a direct line, from Summit to Truckee River, does not exceed eight miles ; but we fortunately encountered two long ravines, with smooth side slopes, which, with the sinuosities of side-hill, gave about three additional miles of distance, enabling us to reach the Truckee with maximum descending grades.

PARTICULAR DESCRIPTION OF LINE.

Commencing at the city of Sacramento, the line will cross the American River about half a mile above Lisle's Bridge ; thence pursuing a north-easterly course, for twenty-five miles, across the Sacramento Valley, it reaches the town of Lincoln, or intersection with the California Central Railroad, which point is at an elevation of 140 feet above the top of the levee at Sacramento.

From Lincoln the line follows up an indentation or bay, in the foot hills, with grades not exceeding 50 feet per mile (passing half a mile north of Virginia), to Barmore's, thirty-one miles from Sacramento (elevation, 340 feet above Sacramento), from which point grades of 84 feet per mile are first used.

Continuing on up the southerly bank of Doty's Ravine (passing about one mile north of Gold Hill), the line crosses Doty's Ravine, running down the north side of same for about one-quarter of a mile, with ascending grades ; thence, turning to the right, it crosses the traveled road, near Dutch Colonel's House, and passes up the upper portion of what is known as Shipley Ravine.

Thence crossing north-easterly corner of the old Boyen Ranch, it follows northerly (near the line of what is known as Sailor's Ravine Ditch), at the base of the foot hills, to Sailor's Ravine.

Running up Sailor's Ravine, about one-third of a mile, the line crosses the same, and, turning to the left, it passes about 300 feet east of Moore's House ; continuing on, up a branch of Sailor's Ravine, to a point called Bar Summit, having attained an elevation of 660 feet above Sacramento.

Thence, winding about between the heads of small ravines, it crosses near the head of Taylor's and Sedergest Ravines, and passing about two-thirds of a mile north of Taylor's House, reaches the side-hill of Dry Creek.

Passing up the south side-hill of Dry Creek, the line follows up two tributary ravines a short distance, to a favorable crossing, and in a short distance further strikes another tributary, called Deadman's Ravine.

This Ravine presenting a smooth side-hill, the line continues up the same about half a mile, to a favorable point, where it crosses, at a hight of about 45 feet.

Pursuing its course down the east side-hill of Deadman's Ravine, it strikes again the main side-hill of Dry Creek, following the same to the point where it breaks from its smooth, uniform valley, into rocky canons ; thence up Dry Creek about two and a half miles, to the Auburn and Nevada Stage Road.

From the Nevada Stage Road to Clipper Gap (a distance of six miles), the line follows up the valley of Dry Creek, with grades varying from 50 feet to 105 feet per mile. (At one point on the profile, a grade of 116 feet per mile will be observed. This is the grade upon the line, as run ; but a slight alteration of line will reduce it to 105 feet.

From point where Dry Creek canons to Clipper Gap, the line passes up and near to Oert's house, Page's Redwines, passing under the flume of Bear River Ditch, and crossing Wyman's Turnpike and Auburn and Nevada Stage Road at Hawes' Store.

Thence, passing over lands and near dwellings of Welles, Gilbert, Cook, Kingsley, Cogswell, Watson, Buckley, and Neil, it reaches Gasorway's, or Golden Gate Hotel (passing about 25 feet in front of Gasorway's house).

Here the stage-road forks, one branch following up a side ravine to the left, over Tunnell Hill, and *via* Empire Mills to Illinoistown, while our line continues to the right, up Dry Creek, about a mile further, passing about 200 feet in front of Predmore's house.

Here, instead of following Dry Creek further (it rising too rapidly for our grades), we cross a gap to the right (called Clipper Gap), and run up the north side hill of Clipper Ravine (a tributary of North Fork of American), to Wild Cat Summit, crossing several short steep side ravines.

Passing through Wild Cat Summit (about one-quarter mile south of Widow Hawes' house), we pass round Hawes' Hill, and curving to the left, cross the main road, and pass up a smooth ravine to the top of the ridge, at a point called Applegate Summit.

A short distance further on, the line passes through Evergreen Gap, crossing the divide again at Baney's Gap, from which point it curves round on side hill (on North Fork side) to Star House Gap, near the Star House.

Here the line crosses Star House Gap (and the traveled road) about 50 feet high, passing up very nearly on the top of divide, to the head of Applegate Ravine, which runs into Bear River, this point being called New England Gap.

From New England Gap the line passes out upon north side hill of North Fork.

Crossing the traveled or Stage Road, it runs along above the same, and about 500 feet above New England Mills, through peach orchard of Murphy ; through Manzinata and Chaparral Gaps, and over Sugar Loaf Summit to Lower Illinoistown Gap, at the point where upper stage road crosses the gap (about one and a quarter miles below Illinoistown).

Crossing this gap, about 30 feet high, the line continues on about half a mile further, over a broken country, to a point called Bear River Gap, where it turns abruptly to the left, with maximum curve, and crosses the ridge with a tunnel of 500 feet in length, emerging on the south side hill of Bear River, along which it pursues its course to Storm's Gap and Long Ravine Gap, leaving Illinoistown about one mile to the right.

Here was found the greatest difficulty in location ; Long Ravine Gap being an unusually low depression, the ridge beyond rising quite rapidly to attain its average elevation.

Here the line crosses gap, about 70 feet high, and curving to the right follows the side hill of Rice's Ravine (leading to North Fork) for about one mile, encountering a succession of short, steep, abrupt side ravines, to Cape Horn, which is a bold, rocky bluff, nearly perpendicular, and 1,200 feet high, above the North Fork of American.

Passing round the face of this bluff, about 200 feet below the table above, we strike the side hill of Robber's Ravine, which runs parallel to Rice's Ravine, and continues up along the side hill of same for about 1½ miles, crossing Oak Summit, and passing about three-quarters south of Madden's Toll House, through Trail Summit.

From this point the line follows along the face of side hill above North Fork, striking Secret Ravine, along which it runs for about one mile, when, turning to the left, it passes up a tributary side ravine to its head, the line striking a point about two hundred feet south of stage road, one mile south of Secret-town.

Running thence, along side of road nearly a mile, it crosses the same, and passing between Everhart's house and barn, at Secret-town, it reaches the head of Secret Ravine, or Secret-town Gap, crossing it with trestling, about 50 feet in height.

Turning to the left, the line now passes north of Cold Spring Mountain (on Bear River side), and for two miles encounters a succession of steep side ravines, where some of the heaviest work on the line will be found. Two tunnels will be necessary on this piece of line, each about 600 feet in length.

Leaving the side hill again, the line strikes a long and nearly level bench, about two miles in length, extending up nearly to Dutch Flat.

This bench is the well-known gravel ridge which extends along the slopes of the Sierras at about this elevation, and on which are situated the mines worked by the hydraulic mining process.

Extending up this ridge to within about one mile of Dutch Flat, the line again takes to side hill to left, running near to Strong's Cabin, Brickell's Steam Saw Mill, Dutch Flat Steam Saw Mill, to the Dutch Flat Water Company's large reservoir (about 1½ miles above Dutch Flat.)

The town of Dutch Flat lies on Bear River side hill, about half way down to Bear River, the line passing about half a mile in the rear, and about 300 feet higher than the town.

At this last-named reservoir, which is upon the top of ridge (called Reservoir Gap), we leave the crest of ridge for the last time, it rising too rapidly to be available for a Railroad line at our maximum grades.

Turning to the left, the line now runs at nearly a level grade, about 1½ miles further to Little Bear River, which stream it crosses just above the Saw Mill, near Widow Homer's Ranch.

Pursuing its course down the north side-hill of Little Bear River, it departs at Elmore Hill, passing round the same, and enters upon the side hill of Bear River.

The river gorge at this point is about 1,500 feet deep—our line being about 500 feet below the top of ridge, and from 1,000 to 1,200 feet above the river. Its side hill is steep, rocky, and marked by many abrupt indentations and corresponding salient points.

The line was carried *round* most of these points ; but upon a final location, it will probably be found advisable to run through the sharp points with short tunnels—the longest of which will be 1,350 feet—none of them, however, requiring shafting.

The line passes up this side hill of Bear River (the grade line being nearly parallel with the crest or top of ridge, and from 500 to 700 feet below the same), crossing through Zerr's Ranch (about 600 feet north of his buildings), striking the lower end of Bear Valley, about 200 feet high, on its south side-hill.

Continuing on for two miles, it leaves the head of Bear Valley, at an elevation of about 350 feet on side hill above the same, crossing the head of Bear River (which is here but a small creek), following it up to its source, which is in a marshy lake, about 1½ mile above Bear Valley.

It will be observed on the profile, that from Zerr's Ranch to head of Bear River a grade line is indicated, running about 100 feet higher on the side hill.

In locating the line as run, the intention was to cross Bear River, and continue on the side hill of the main gorge to Yuba River (near head of South Yuba Water Company's Canal), keeping up on main side hill of South Yuba to Yuba Bottom ; but upon examination, this proved to be impracticable, the Yuba above Bear Valley running in deep rocky canons, with perpendicular rocky walls of granite, too rugged in their character to admit of the location of a line over them.

It therefore became necessary to carry the line on to a bench above and south of the Yuba River, and nearly at the base of main ridge—a line from Zerr's Ranch to this point being practicable at our maximum grade, the only change necessary being to make the location a little higher on side hill.

Our present line passes about 100 feet to left of Jew David's Cabin. On the location as changed, it will pass a short distance in the rear of same.

Continuing on, the line pursues the general course of Yuba River, about six miles further, to the point where old Truckee emigrant trail leaves Yuba Bottom to ascend on the main ridge to the south (which point is 19 miles above Dutch Flat by trail, and about 22½ miles by our line), called Yuba Bottom.

This point is at the head of the lower canons and falls, between Yuba Bottom and Bear Valley.

In subsequent location, it will be necessary to run the line between these two points, (viz., head of Bear River to Yuba Bottom) a little lower down on side hill, as indicated on profile, for the following reasons : Fearing that the elevation of Yuba Bottom might prove too high, the line was run from head of Bear River, at our maximum grade, in order to gain as much elevation as possible. But on reaching Yuba Bottom, it was found that this gave more elevation than was necessary ; therefore the last half mile of line was run down onto Yuba Bottom. The last elevations show, that a grade of 80 feet per mile can be obtained from head of Bear River to Yuba Bottom.

From this point (Yuba Bottom), the line follows the river for about one mile, passing through a short canon, and emerging at very near the level of water surface in river (called Hall's Canon).

From this point the line was first run for about six miles up the river valley, taking to side hill at the two upper canons, the line being carried up to the upper ford, at head of Wilson's Cut-off ; but finding that the Summit could not be reached without increasing grade on the remaining distance, our parties proceeded to Summit, from which a line was run down on south side hill of Yuba, at maxi mum grade, striking into the valley line, at head of first small canon (about one mile above Yuba Bottom), called Hall's Canon.

The location, therefore, is carried from Hall's Canon, on south side-hill of Yuba, at maximum grades, into lower end of Summit Valley (about 3½ miles below summit of Sierras), crossing the old Truckee Emigrant Trail, near Kidd's Reservoir, about half-way up to the top of ridge, the line striking the lower end of Summit Valley, about the level of Yuba River ; running thence straight across Summit Valley, about two miles, at a grade of about 25 feet per mile, to a point on the south side of Summit Valley, near Cook's old cabin, the line takes to side hill on the right, and in 1½ mile further reaches the summit of Sierras, with a cutting of about fifty feet.

By commencing the last-named ascent a little further back in Summit Valley, the summit can be reached with maximum grades without any excavation. The elevation of surface at summit is 7,027 feet above top of levee at Sacramento.

DESCENT ON EASTERN SIDE OF SIERRA NEVADA.

Pursuing its course from the summit easterly, the line commences its descent with maximum grade, and, passing to the right, is carried for next two miles over a steep, rocky side hill, on which will be found quite heavy rock cutting ; thence, turning abruptly to the right, it enters upon side-hill of Strong's Ravine, and, running up the same, about one mile, crosses over, and is carried down over a smooth side-hill, to a point 600 feet higher than the south-west corner of Donner Lake, thence pursuing its course along the side-hill for about three miles, it encounters Coldstream Ravine, and runs up the same a little over a mile.

Crossing Coldstream, the line follows along down its south side-hill to within about ¼ mile of the Main Truckee, where, turning to left, it crosses the valley of Donner Creek, accomplishing the descent in about 11½ miles of downward maximum grade. Thence the line was carried about five miles down the valley of Truckee River, and the survey terminated at a point 128 miles from Sacramento.

The object of this survey being to accomplish the crossing of the Sierras with a Railroad line, it was considered unnecessary, at this time, to extend the survey any further down the Truckee River ; barometrical elevations were taken from our line up the Truckee River to Lake Bigler, and also down the same to the lower end of Truckee Meadows, showing its average fall to be only about 35 feet per mile.

I also carried a series of observations down Steamboat Valley to Steamboat Springs, thence across the Washoe Mountains (*via* Virginia, Flowery, and Six Mile Canon) to the Carson River, thence down the same to Fort Churchill—a profile of which is shown on the small, general profile of grades.

A continuation of our line down the Truckee to Big Bend follows the same, from terminus of survey, 13 miles, to Neil's Ranch, or Henness Road ; thence 7 miles to Stout's crossing of Truckee ; thence through the Truckee Meadows and across head of Steamboat Valley 8 miles to Stone's crossing or western base of Washoe Mountains ; thence 23 miles, through Washoe Mountains, to Big Bend of Truckee, or edge of Humboldt Desert, making total distance about 178 miles.

No obstacle exists, and a line, with light grades over exceedingly smooth surface, can be carried from Stout's crossing of Truckee, up Steamboat Valley, to its head ; thence through Washoe Valley into Eagle Valley, which opens into Carson Valley ; thence down the Carson River to Fort Churchill, or edge of desert, making, however, a longer line than that down Truckee.

GRADES.

The following table of grades extends from Lincoln (25 miles from Sacramento, and 6 miles from westerly base) to terminus of survey (or four miles beyond eastern base of mountains), or includes 11 miles beyond base of mountains. The average grade from Sacramento to Lincoln (25 miles) being six feet per mile.

TABLE OF GRADES.

LENGHTH OF PLANE, FEET.	GRADE ASCENDS PER MILE.	GRADE DESCENDS PER MILE.	LENGTH OF PLANE, FEET.	GRADE ASCENDS PER MILE.	GRADE DESCENDS PER MILE.	LENGTH OF PLANE, FEET.	GRADE ASCENDS PER MILE.	GRADE DESCENDS PER MILE.
3,000	9	......	4,000	53	......	500	Level.	
3,000	53	......	6,750	105	......	5,000	79	
1,000	Level.	......	18,250	Level.	......	3,000	105	
3,000	45	......	3,000	105	......	3,000	79	
4,500	Level.	......	1,000	Level.	......	38,000	105	
6,500	45	......	6,000	36	......	2,000	Level.	
4,000	36	......	13,500	Level.	......	1,000	53	
4,300	53	......	17,500	105	......	25,000	79	
6,300	79	......	1,000	Level.	......	2,750	26	
3,200	Level.	......	3,500	105	......	3,500	105	
500	53	......	1,000	Level.	......	2,000	Level.	
12,700	84	......	3,500	105	......	57,500	105	
3,300	Level.	......	1,000	53	......	1,750	53	
5,000	84	......	2,500	105	......	2,500	Level.	
6,000	65	......	2,000	Level.	......	13,750	105	Summit.
7,100	84	......	13,000	105	......	45,000	......	105
1,300	53	......	1,000	Level.	......	1,750	......	Level.
2,500	105	......	1,000	53	......	15,250	......	105
1,800	26	......	4,000	Level.	......	2,500	......	Level.
4,000	75	......	172,500	105	......	6,500	......	53
1,000	53	......	1,250	Level.	......	3,200	......	39
1,000	75	......	1,000	79	......	2,750	......	Level.
1,700	105	......	1,000	Level.	......	3,500	......	39
2,500	75	......	4,000	53	......	1,000	......	53
2,000	105	......	14,000	105	......	2,000	......	39
2,000	65	......	3,000	53	......	....	......	
3,000	105	......	4,000	79	......	....	......	
15,000	116	......	10,500	105	......	....	......	
11,000	105	......	1,000	53	......	....	......	

SUMMARY OF GRADES.

	GRADE. FEET PER MILE.	MILES, ASCENDING.	MILES, DESCENDING.	
	9	0.56		
	26	0.86		
	36	1.89		
	39		1.04	
	45	1.80		
	53	5.08	1.42	
	65	1.53		
	75	1.38		
	79	8.39		
	84	8.03		
	105	43.08	11.41	
	116	2.84		
	Level.	11.19	1.33	
Total distance Lincoln to Summit...............		87.63	15.20	
Deduct 7 miles beyond base..............		7.00	4.00	Deduct beyond base
Leaves distance west'n base to Summit.............		80.63	11.20	Summit to eastern base.

From which it appears that upon the western slope :

Total distance from western base to Summit is.......80.63 miles.
No. of miles of Ascending Grade 116 ft. per mile } 2.84
No. of miles of Ascending Grade 105 ft. per mile } 43.08
No. of miles of Ascending Grade 84 ft. per mile...... 8.03
No. of miles of Ascending Grade 79.75 ft. per mile ... 9.77
No. of miles of Ascending Grade 65 ft. per mile...... 1.53
No. of miles of Ascending Grade 53 ft. per mile...... 5.08
No. of miles of Level 11.19

While upon the eastern side, or descent, there are 11.41 miles of grade, of 105 ft. per mile.

The total elevation of grade overcome at Summit is 7,000 feet.

That the elevation overcome in crossing the Summit of Sierra Nevada is greater than that upon any other line of road in the United States, is true. But it is no less true that the grades employed in reaching that summit, are less than the maximum grade employed on important roads in the United States ; the Pennsylvania Central having 10 miles of grade of 95 feet per mile, while the Baltimore and Ohio Railroad has one plane, 15 miles in length, on which are 11½ continuous miles of grade of 116 feet per mile, and 3½ of 100 feet per mile. A portion of the Virginia Central Railroad was operated successfully a period of five years over 2 miles of grades of 300 feet feet per mile, with curves of 300, and one as small as 238 feet radius—with a 30-ton locomotive engine.

By referring to the above table of grades, it will be seen that the longest piece of continuously-ascending maximum grade of 105 feet per mile, is about 10 miles ; all of these heavy grades being relieved at frequent intervals by lesser grades or levels. So that on no portion of the road will there be so long a piece of continuously-ascending grade of 105 feet per mile, as upon the 116-feet grades of the Baltimore and Ohio Railroad.

It is deemed unnecessary, here, to enter upon a calculation of the effective power of locomotive engines upon different gradients, General McClellan having given very full notes of the results of his investigations upon the subject, in his memoranda on P. R. R., published in the Report of the Secretary of War upon P. R. R. Surveys. The following extracts from his Report are given here :

> "On the Pennsylvania Central Road, are gradients of 95 feet per mile, for 9¾ miles. Passenger trains ascend this grade with a velocity of 24 miles per hour, and descend at 20 per hour.
>
> "The working load of the heavy freight engines (weighing 65,000 lbs., on eight drivers), on the 95 feet gradient, is 125 tons net, or about 208 tons, including tender and cars."

Of the Baltimore and Ohio Railroad, he says :

> "The most interesting and analogous case, however, to which I can refer, is that of the Baltimore and Ohio Railroad, one of the great lines in the United States, alluded to in a previous part of this article, as connecting the seaboard with the valley of the Mississippi across the Alleghany Mountains. In the year 1850, 447,000 tons of merchandise and 180,000 passengers were transported on this Road, the receipts amounting to $1,343,000, the Road being only about half completed. When finished to the Ohio River, the receipts are expected to amount to $3,000,000. On this Road are heavy gradients, with several curves of 600 feet radius, and some of four hundred feet. It is to the mountain district of the Road just opened, that I wish particularly to invite attention, and for this purpose an extract is made from the official Report of the Chief Engineer, Mr. Latrobe, one of the most distinguished engineers of North America, in which he describes the route and grades over the Alleghany Mountains."
>
> "At about a mile below this point, the *high grade of* 116 *feet per mile begins and continues about* 11½ *miles*, crossing the Potomac from Virginia into Maryland near the beginning of the grade, and thence ascending the steep side slopes of Savage River and Crab Tree Creek, to the summit, at the head of the latter, a total distance of about 15 miles. Upon the last three and a half miles of which, the grade is reduced to about 100 feet per mile. From the summit, the line passes for about 19 miles through the level and beautiful tract of country, so well known as the Glades, and near their western border the route crosses the Maryland boundary, at a point about sixty miles from Cumberland, and passes into the State of Virginia, in whose territory it continues thence to the terminus on the Ohio. From the Glades, the line *descends by a grade of* 116 *feet per mile, for eight and a half miles*, and over very rugged ground, and thence three and a half miles further to Cheat River, which it crosses at the mouth of Salt Lick Creek. The route, immediately after crossing this river, ascends along the broken slopes of the Laurel Hill, by a *grade of* 105 *feet per mile for five miles*, to the next summit, passing the dividing ridge by a tunnel of 4,100 feet in length ; and whence, after three miles of light grade, a descent by the *grade of* 105 *feet per mile for five miles* is made to the Valley of Raccoon Creek, by which and the Valley of the Three Forks Creek, the Tygarts Valley River is reached in fourteen miles more, at the Turnpike Bridge above described, and 103½ miles from Cumberland."

VIRGINIA CENTRAL RAILROAD.

Upon the Virginia Central Railroad, the Alleghany Mountains were crossed with grades of 296 feet per mile, and the Road operated successfully a period of over five years.

Reference is had to a pamphlet published by Chas. Ellet, Esq., the Engineer of the Road, who says :

EASTERN SIDE.

"The length of descent, from summit to foot of grade. on eastern side, is 2 37-100 miles.

"The road descends in this distance 610 feet.

"The average grade is, therefore, 257 feet per mile.

"The maximum grade is 296 feet per mile.

WESTERN SIDE.

"Length of descent 2 2-100 miles.

"Road descent in this distance 450 feet.

"Average grade is 223 feet per mile.

"Maximum grade is 280 feet per mile.

"On both sides of mountains, the ruling curves are described with a radius of 300 feet, on which the grade is 237 feet per mile."

"The admirable engines relied on to perform the extraordinary duties imposed upon them in the passage of this summit have failed *but once* in this period—2½ years—to make their regular trips. The mountain has been covered with deep snow for many weeks in succession, and the cuts have been filled, for long periods, many feet in depth, with drifted snow ; the ground has been covered with sleet and ice, and every impediment due to bad weather and inclement seasons has been encountered, and successfully surmounted in working the tracks.

"The total weight of engines is 55,000 lbs., or 27½ tons, when the boiler and tank are supplied with fuel and water enough for a trip of eight miles."

"Ascending engines stop daily on a grade of 280 feet per mile, and are there held by the brakes, while the tanks are being filled, and are started again, at the signal, without difficulty."

With the practical experience afforded by the workings of these Roads, it may be safely assumed, that a thirty-ton engine, with eight drivers, will ascend the maximum grades of this Road with an ordinary passenger train at a speed of twenty miles per hour.

That an engine of the same class will ascend these grades, with a freight train weighing 150 tons, at a speed of 13 miles per hour.

The following is taken from memoranda of Gen. McClellan on subject of Pacific Railroad :

Calculations for a 30-ton Engine on 6 drivers, total adhesive weight..	67,200 pounds.
By formula 1, maximum load on a level is..........................	1,680 tons.
By formula 2, maximum grade up which this Engine can draw a load of 76 tons is..............................	401 feet.
By formula 4, the maximum grade for same load is..............	281 feet.
By formula 1, the maximum load for grade of 150 feet is	186 tons.
By formula 3, the maximum load for same grade is	133½ tons.
By formula 1, the maximum load for grade of 200 feet is	146 tons.
By formula 3, the maximum load for same grade is	104½ tons.

COMPARISON OF ELEVATIONS OVERCOME.

Route.	Length. Miles.	Summit Elevation. Feet.	Total Rise and Fall. Feet.	Max. Grade, Feet.
Boston route..........	500	1,440	4,700	83
N. Y. Central.........	400	650	2,100	30
N. Y. and Erie........	460	1,720	6,500	70

Route.	Length. Miles.	Summit Elevation. Feet.	Total Rise and Fall. Feet.	Max. Grade, Feet.
Philadelphia route	340	2,400	5,600	95
Baltimore route	390	2,700	7,000	116
Charleston route	490	1,400	5,000	40
Savannah route	440	1,400	5,000	40
Santiago	110	2,640	4,340	119
Central Pacific	140	7,000	8,800	105

It will thus be seen, that the sum of ascents and descents upon this line are but 1,800 feet more than upon the Baltimore and Ohio Railroad, our line crossing a summit of 7,000 feet, the elevation of summit on that Road being only 2,700 feet.

The small percentage of total rise and fall upon this line, as compared with the altitude of summit, is due to the fact, that there are no undulatory grades—the rise and fall is constant, no elevation being lost.

GRADES ON LIEUT. BECKWITH'S ROUTE FROM LASSENS TO SALT LAKE—451 MILES.

The following in a statement of grades from Lassens to Salt Lake, taken from Lieut. Beckwith's Profile, assuming his projected improvements in location :

	Miles.	Ascending grade, feet per mile.	Descending grade, feet per mile.
Lassen's to Junction Main Forks of Humboldt	145	4	
Junction Forks to Creek	35	31	
To stream near Summit	8	89	
To summit Humboldt Mountains	1	25	
Summit to mountain stream	3		25
To Camp 16	8		58
To Camp 15	15	4	
To Camp 14	28	7	
To Camp 13	10		21
To Camp 12	20	Level.	
To Camp 10, Fish Creek	28		21
To Point on Fish Creek	16	Level.	
To Camp 8, Granite Mountains	40		10
To Camp 6	24	0½	
To Camp 5	15		12
To shore of Salt Lake	21		10
To Camp 3	13	18	
To Oquirrh Mountains, or opposite Salt Lake City	21	8	
	451		

The highest grade shown being 8 miles of 89 feet grade, which can probably be reduced to 50 or 60 feet per mile.

ALIGNMENT.

The first 25 miles of line from Sacramento to Lincoln will be generally straight. From Lincoln to Barmore's, or six miles further, the least radius of curvature will be 1,432 feet.

From Barmore's (or western base) to the Truckee River, or eastern base of Sierra Nevada, the line is mostly on side hill; there is, consequently, a preponderance of curved line rendered necessary by the sinuosities of side hill and projecting points.

The least radius of curvature, however, upon the line is 573 feet, or a ten-degree curve.

The Baltimore and Ohio Railroad has several curves of 600 and some of 400 feet radius. (See Report of General McClellan.)

The Virginia Central Railroad had curves of 300 feet radius, on which the grade was 237 feet per mile. One curve upon that Road had a radius of 238 feet. (See Report of Chas. Ellett, Esq.)

Curves of 500 feet radius are common upon many of our Eastern Roads, and are safely traversed at a speed of 30 miles per hour.

For a particular description of the alignment of this Road, attention is invited to the large map of location (scale 400 feet per inch) exhibiting each curve and tangent, with the length and radius marked upon it.

Also, to the tabular arrangement of the same, in which each curve and tangent is laid down, from which it will be seen that between Barmore's and Truckee River, a distance of 92 miles, there is of straight line:

No. of Curves of 573 feet radius	157
No. of Curves of 716 feet radius	65
No. of Curves of 955 feet radius	140
No. of Curves of 1,432 feet radius	65
No. of Curves of 1,910 feet radius	62
No. of Curves of 2,865 feet radius	23

From the eastern base of mountains to Big Bend of Truckee, the length of curved line will not exceed thirty per cent. of the whole distance, the curves being generally of over 1,500 feet radius.

Thus, it will be seen that the alignment of this Road compares favorably with that of many of the most important Roads of the Atlantic States.

SNOWS.

The argument of obstruction from snow having been frequently urged against the Central route for Pacific Railroad, I have taken much pains to arrive at correct conclusions upon this subject, and feel warranted in the statement, *that a Railroad Line, upon this route,* *can be kept open during the entire year* for the transaction of its business.

It is true that snow falls to a greater depth upon the elevated portions of this line than upon the lines of Railroads in the Atlantic States.

The depth at which snow lies upon this route is plainly distinguishable at any season.

The trees are generally covered with moss down to the level of the snow, and thousands of them can be seen entirely free from moss up to a certain height, and almost entirely covered with moss from that height.

Frequent marks have also been made by persons who have traversed the route on snow-shoes during the winter, by axe marks chopped in the tree at the level of the snow.

The limbs of the small trees also afford indications of the height of snow ; those limbs lying beneath the snow maintaining their original or natural position, while those above the snow-line are almost universally bent downwards, and not unfrequently broken by the weight of snow.

These observations lead to the conclusion that the greatest depth of undisturbed snow is 13 feet at the summit.

In places where drifts occur, the depth is of course greater, and at corresponding points less than the average level.

This may, at first, seem to be a serious obstacle to the passage of Railroad Trains. But this depth of 13 feet is not the result of a single storm, but the *accumulation of a number of successive storms, occurring during the winter.*

Snow does not melt very rapidly at this elevation, during the winter.

A storm will occur, and snow fall to the depth, perhaps, of three or four feet.

Another storm will, perhaps, add two or three, or four feet to this depth.

Successive storms add to its depth ; but it is believed that its highest level is not over 13 feet.

The town of Dutch Flat, 72 miles from Sacramento, and 40 miles from Summit, may be considered the foot of snow line on western side—snow seldom falling more than two feet there, and melting off in a day or two.

The average depth of snow at lower end of Donner Lake is about six feet.

At Neil's Ranch, on the Truckee River, 28 miles easterly from the Summit, I am assured by Mr. Neil, that the greatest depth of snow last winter was 18 inches, and that during the five years he has lived there, it has not exceeded three feet in depth.

It may be safely concluded that the line of deep snows terminates where our line strikes the Truckee River, or, say, 12 miles from the summit, making 52 miles of snow line.

It will also be remembered that our line is almost exclusively a *side-hill line*, from which the snow can be more easily removed than from a level surface.

It is only necessary, then, to start an engine with snow-plows, from the summit each way, at the commencement of a storm, clearing the snow as it falls. A similar course of procedure at each successive storm, will keep the track open during the entire winter.

It is also stated that a crust soon forms upon the snow, which prevents its drifting badly.

The only point where we shall encounter a level surface of snow, is in Summit Valley, for about two miles.

By elevating the track at this point, no trouble need be anticipated.

The great dread, and real danger of a storm in the mountains, does not arise from the depth of snow, but from the entire absence of shelter and relief in the mountains, there being no houses or accommodations, excepting upon the wagon roads across to Washoe.

The Placerville wagon road is kept open for travel during the entire winter, hotels being established every few miles along the route. With a Railroad built upon this route, this objection would also be entirely obviated.

TUNNELS.

Upon the line, as located, but four tunnels appear upon the profile, but upon further examination, it has been deemed expedient to cut through several sharp projecting points, instead of carrying the line around them.

It is estimated that the cost of these tunnels will not exceed the cost of the increased length of line around these points.

It will be observed that the tunnels are comparatively short, the longest being 1370 feet in length ; they can all be worked from either end, reducing the greatest consecutive length of tunneling to 685 feet.

They are in rock, generally granite, and require no shafting.

The cost of shafting in long tunnels is usually one-third the whole cost of tunnel.

Their lengths are as follows :

1	500 feet long.	1	1,300 feet long.	1	1,200 feet long.
1	600 " "	1	1,370 " "	1	1,100 " "
1	800 " "	1	1,250 " "	1	400 " "
1	1,200 " "	1	1,300 " "	1	1,070 " "
1	1,000 " "	1	1,370 " "	1	1,100 " "
1	1,100 " "	1	300 " "	1	450 " "
				18	17,410

Making 18 tunnels, with an aggregate length of 17,410 feet, costing, at $50 per linear foot, $870,500.

The longest tunnel can be excavated in 13 months, at the rate of 2 feet per day.

The following statistics were given in Report of Gen. McClellan to the Secretary of War, on Pacific Railroad :

Nerthe Tunnel, France—15,153 feet long ; 24 shafts ; aggregate length of which was 7,589 feet ; deepest of which was 610 feet ; in very hard limestone ; dimensions, 29½ by 26¼ feet.

Its cost was as follows :

For mining body of tunnel..................	$705,982
For mining shafts..........................	109,081
Masonry for shafts.........................	49,069
Lining for body of tunnel..................	423,711
Cost of aqueduct...........................	10,607
Total cost of tunnel..................	$1,298,450

Cost of mining main body of tunnel, $46.58 per linear foot.

Woodhead Tunnel, England—3½ miles long 5 shafts ; 400 to 600 feet deep ; rock, granite, or mill-stone rock ; entire cost, $1,026,705 ; cost of tunnel, *including shafting*, $55 per linear foot. Excavated at the rate of eight feet per day.

Uppingham Tunnel—1,320 feet long ; cost $40 per linear foot.

Black Rock Tunnel, Pennsylvania—1,932 feet long ; rock, greywacke ; six shafts ; cost $77 per linear foot.

The cost per cubic yard of excavating tunnels in the United States, has been :

Lehigh, very hard granite........	$4 36 per linear foot.
Schuylkill State.................	2 00 " "
Union State......................	2 09 " "
Blue Ridge Tunnel................	4 00 " "

A section of tunnel, averaging 20×17 feet, contains 12⅔ cubic yards per linear foot.

TIME CONSUMED IN MAKING THE TRIP WITH PASSENGER TRAINS FROM SACRAMENTO TO VIRGINIA STATION.

	Distance.	Speed per Hour.	Time.
Sacramento to Barmore's..........	31 miles.	31 miles.	1 hour.
Stoppage at Barmore's..................		....	:30
Barmore's to Summit..............	81 miles.	20 miles.	4
Carried forward.........	112		5:30

	Distance.	Speed per Hour.	Time.
Brought forward	112		5:30
4 stoppages, 15 minutes each			1
Summit to Truckee River	11 miles.	15 miles.	:45
Stoppage			:15
Tuckee to Neil's	17 miles.	34 miles.	:30
Neil's to Stone's or Virginia Station,	15 miles.	34 miles.	:30
	155 miles.		
Total time consumed in making trip or 8½ hours.			8:30

A train leaving Sacramento at 6 A. M., would arrive at Virginia Station (13 miles North of Virginia) at 2.30 P. M., passengers reaching Virginia City at 4.30 P. M. ; Gold Hill, 4.50 P.M. ; Silver City, 5.15 ; Chinatown, 6.10, and Carson City, 7.15 P. M.

Freight trains leaving Sacramento at 6 A. M., would reach Virginia Station at 7 P. M., including all stoppages.

Returning, the passengers leaving Virginia Depot at 5 P. M., would arrive in Sacramento in time to take the 2 o'clock boat, and arrive in San Francisco the same evening.

ESTIMATE OF COST.

The estimated cost of this Road will be found to exceed the average cost of Railroads in the Atlantic States, but is nevertheless a cheaper line than has been heretofore estimated for the crossing of the Sierra Nevada Mountains.

The rugged nature of the country over which the line passes, the character of the excavations (which for 90 miles are almost exclusively rock cuttings), the high cost of labor in California, the extra weight of rail (estimated at 75 lbs. per yard), with its cost of transportation to California, all tend to swell the cost of Road beyond the average cost of Railroads in the Atlantic States.

But when it is considered that this line accomplishes the crossing of Sierra Nevadas (by far the most difficult and expensive portion of the great line across our continent), is carried over an elevation of 7000 feet in height, entirely avoids the second summit of Sierra Nevada, saves 184 miles in distance, and $13,500,000 in cost to the Pacific Railroad, its cost of $88,000 per mile can scarcely be deemed high.

The Boston and Providence Railroad cost	$81,273 00	per mile.
The Boston and Lowell Railroad cost	78,636 00	"
The New York and Erie Railroad, about	80,000 00	"
The Hudson River Railroad, about	80,000 00	"

COST OF ROAD FROM SACRAMENTO TO STATE LINE, OR NEIL S—140 MILES.

	MILES.	COST PER MILE.	TOTALS.
Sacramento to Lincoln.............	25	$50,000	$1,250,000
Lincoln to Barmore's................	6	60,000	360,000
Barmore's to Nevada Road...........	12	90,000	1,080,000
Nevada Road to Clipper Gap........	6	50,000	300,000
Clipper Gap to Long Ravine........	12	80,000	960,000
Long Ravine to Gravel Ridge.......	9	110,000	990,000
Gravel Ridge to Bear River.........	5	85,000	425,000
Bear River to South Yuba...........	21	100,000	2,100,000
Yuba to Hall's Canon...	1	75,000	75,000
Hall's Canon to Summit Valley......	11	100,000	1,100,000
In Summit Valley....................	2	75,000	150,000
To Summit Sierras.................	2	150,000	300,000
Summit to Strong's Canon	2	150,000	300,000
Strong's Canon to Truckee..........	10	100,000	1,000,000
Truckee to Neil's or State Line.....	16	70,000	1,120,000
Add 18 Tunnels....................			870,000
Total cost to State Line............	140 miles		$12,380,000

Or an average cost of $88,428 per mile.

ADDITIONAL COST TO STONE'S CROSSING OF TRUCKEE OR VIRGINIA STATION—15 MILES.

	MILES.	COST PER MILE.	TOTAL.
Neil's to Stout's......................	7	$70,000	$490,000
Stout's to Stone's..................	8	50,000	400,000
Total cost.............................	15		$890,000
Making total cost of 155 miles....................			$13,270,000

ADDITIONAL COST TO BIG BEND OF TRUCKEE OR HUMBOLDT DESERT—23 MILES.

	MILES.	COST PER MILE.	TOTAL.
Stone's Crossing or Big Bend........	23	$70,000	$1,610,000
Making total cost of 178 miles....................			$14,880,000

Or an average cost of $83,600 per mile.

ADDITIONAL COST OF A RAILROAD LINE FROM BIG BEND OF TRUCKEE TO LASSEN'S MEADOWS, OR TO A CONNECTION WITH LIEUT. BECKWITH'S LINE ON HUMBOLDT RIVER—104 MILES.

	MILES.	COST PER MILE.	
From Big Bend of Truckee to Lassen's Madows..............	104	60,000	$6,240,000
Making total cost to L. Meadows, 282 miles,			$21,120,000

Or an average cost of $74,900 per mile.

ADDITIONAL COST OF LINE FROM LASSEN'S MEADOWS TO SALT LAKE, TAKEN FROM ESTIMATES OF LIEUT. BECKWITH, P. R. R. REPORTS—451 MILES.

	MILES.	COST PER MILE.	
Lassen's Meadows to Salt Lake....	451	$45,000	$20,295,000
Making total cost of line from Sacramento to Salt Lake, 733 miles,			41,415,000

Or an average cost of $56,500 per mile.

ESTIMATED COST OF LINE FROM SALT LAKE TO COUNCIL BLUFFS, BY LIEUT. BECKWITH, P. R. R. REPORTS—1,125 MILES.

	MILES.	
Council Bluffs to Salt Lake........	1,125	$58,485,000
Making total cost from Council Bluffs to Sacramento........	1,858	99,870,000
For purpose of comparison, add cost Sac to Benicia..........	58	2,630,000

	MILES.		
Gives total length, Council Bluffs to Benicia	1,916	Total cost,	$102,500,000
Estimate by Beckwith's route......	2,100	Total cost,	$116,000,000
Saving, in distance...............	184	In cost,	$13,500,000

RECAPITULATION AND ESTIMATE OF ENTIRE COST OF PACIFIC RAILROAD LINE, TAKING LIEUT. BECKWITH ESTIMATES, FROM COUNCIL BLUFFS TO LASSEN'S MEADOWS, AND THENCE VIA THIS ROUTE TO SACRAMENTO.

Total distance, 1,858 miles.

	MILES.	COST PER MILE.	TOTALS.
Council Bluffs to Black Hills......	520	$35,000	$18,200,000
Black Hills to South Pass	291	75,000	21,825,000
South Pass to Fort Bridger........	131	50,000	6,550,000
Fort Bridger to Salt Lake	173	60,000	10,380,000
Timpanogos Canon................	10	150,000	1,500,000
Salt Lake to Lassen's Meadows	451	45,000	20,295,000
Lassen's to Big Bend, Truckee......	104	60,000	6,240,000
Big Bend to California State line....	38	66,000	2,500,000
State line to Sacramento	140	88,428	12,380,000
Total length	1,858	Total cost....	$99,870,000

The importance of this route to the great enterprise of which it is destined to form a link, cannot be more clearly manifested than in the reduction of cost in constructing the Pacific Railroad.

In all the previous comparisons of cost and distance, the Central Route has labored under great disadvantage, and has not taken the rank among routes, to which, by its merits, it was entitled.

A reduction in cost of $13,500,000, and a saving in distance of 184 miles of line, present features which may well invite consideration from the friends of that project.

GENERAL REMARKS.

It will be observed that the estimates of cost and distances from Big Bend of Truckee to Salt Lake are made upon the Beckwith or Humboldt Route, a distance of 733 miles.

While it is possible that a more southerly line can be found along or near the Simpson route, in the absence of surveys, or data for estimate, no reliable opinion can be formed of its feasibility or probable cost.

Our line, at Big Bend of Truckee, is in position to join an extension on either route.

According to the itinerary of Captain Simpson, it does not appear that the more southerly route presents any advantage in distance to Salt Lake City.

The distance given by Captain Simpson from Carson City to Camp Floyd, is 554 miles. Adding to this the distance from Sacramento to Carson City, 142 miles, and the distance from Camp Floyd to Salt Lake City—say 35 miles—it gives the total distance from Sacramento to Salt Lake City as 731 miles.

From our line at Big Bend of Truckee, *via* Simpson route to Salt Lake, the distance would be about the same as to Salt Lake City, on the Humboldt route, but should the main line of lower Road be carried around the head of Utah Lake, and up the Timpanogos, it would make the lower line about 50 miles the shortest.

If a line can be found from the sink of Humboldt across to Gravelly Ford (on that river), it will shorten the Humboldt route about fifty miles.

There are three important considerations, however, which give the route up the Humboldt River a manifest advantage over any other route for a Railroad line.

First. Its availability for a connection with Oregon and Washington.

Lassen's Meadows are only about eighty miles south of the forty-second parallel of latitude, which parallel is the southern boundary of Oregon, there being a good emigrant road from that point to Jacksonville and Fort Lane in Oregon, the line following around the northerly end of Mud Lake, up Black Rock Creek, southerly end of Goose Lake, and between the Klamath Lakes to Jacksonville, from which point a good railroad line, with light grades, was found (see Report of Lieuts. Williamson and Abbott) to Portland on the Columbia River, the distance from Lassen's Meadows to Jacksonville being about 280 miles.

Second. The recent discoveries of silver on the Humboldt River in the vicinity of Lassen's Meadows.

The well-known discoveries of silver ore in the Washoe Mountains has drawn thither, in the last two years, a population of about 17,000 souls, most of whom are hardy, able-bodied miners. Numerous flourishing towns and villages have sprung into existence, permanent improvements have been made, and but a few years will elapse before a new State will be formed out of that portion of Nevada Territory.

Within the last few months, discoveries of silver have been made on the Humboldt, which are said to rival those of Washoe. Already a new city is in existence, and hundreds of miners have gone there. There will, of course, be but a small emigration there this winter; but next spring and summer will undoubtedly witness an influx of population hardly second to that of Washoe.

The mines are stated to be of great extent and richness, many of the out-croppings assaying over $1,000 per ton. A number of tons of ore have been sent to Sacramento and San Francisco for trial, the results of which have proved them to be of extraordinary richness.

Cinnabar and coal have also been discovered in this locality.

Several mills are in the course of erection, and permanent improvements are being rapidly made.

Being on the main emigrant route to California, and accessible from both Oregon and California, the accessions to its population cannot fail to be large; and it will not be many years before the new State of *Humboldt* will apply for admission into the Union.

Thirdly. From the feasibility of this as a Railroad route, and the character of soil, &c., along its route.

After striking the Humboldt at Lassen's, there are 190 miles of unobstructed valley, on which the grade for 145 miles is only four feet per mile; 36 miles are level; 24 miles has a grade of ½ a foot per mile; 160 miles has a grade 4 feet; 50 miles has a grade of 7 and 8 feet; 53 miles of grade of 8 and 10 feet; 43 miles a grade of 18 to 21 feet; 40 miles of from 25 to 31 feet; 18 miles of grade of 58 feet; there being only 8 miles of a higher grade, in 89 feet, which can undoubtedly be reduced.

The elevation at Lassen's is only about 250 feet lower than the Big Bend of Truckee, the distance 104 miles.

There will be then 539 miles of light grades, not exceeding 31 feet per mile, on a line 555 miles long—a feature of no little importance in determining the location of the Pacific Railroad.

The valley of the Humboldt has been traversed by many thousands of emigrants to Oregon and California, and is well known to embrace many valleys of alluvial, fertile soil.

The general character of the soil in the great basin is barren and sterile, except where intersected by rivers. The valley of the Humboldt has received the largest share of the emigrant travel, for the reason that it afforded good grass, and water in abundance.

Being more inviting to emigrants, it will settle up more rapidly, and thereby greatly facilitate the construction of a Railroad line on this route.

Accompanying this Report, will be found the following Maps, Profiles, &c.:

A. Large map, on a scale of 400 feet per inch (90 feet long), showing the curves and tangents, from Dutch Flat to Truckee River, for filing in Secretary of State's Office.

B. 17 sheets of location, numbered 1 to 17, inclusive, scale 400 feet per inch, showing curves and tangents, from Barmore's (or western base), to Dutch Flat, for filing, as above. (Also, copies of same.)

C. 5 large maps (20 feet long), scale 400 feet per inch, showing curves and tangents, as follows:

No. 1. Barmore's to Clipper Gap.
No. 2. Clipper Gap to Dutch Flat.
No. 3. Dutch Flat to Rattlesnake Bluffs.
No. 4. Rattlesnake Bluffs to Summit.
No. 5. Summit to eastern terminus of survey.

D. 32 sheets, numbered 1 to 32, scale 400 feet per inch, exhibiting the angular line as run with projected curves and tangents thereon.

E. Map (16 feet long) scale 5,000 feet per inch, exhibiting the country from San Francisco to terminus of survey, showing our line, with adjoining towns and rivers, for 10 miles on either side, and connecting railroads.

F. Traced copy of the same.

G. Smaller map, prepared for lithographing, showing whole country, from San Francisco to Big Bend of Truckee.

H. Britton and Rey's map of California.

I. U. S. Surveyor General's map of State.

J. Elliott's map of a portion of the State.

K. Ransom's map of San Francisco and 40 miles round.

L. Map of Sac Valley R. R., Lac to Folsom, scale 5000.

M. Map of California Central R. R., location Folsom to Marysville.

N. Map of California Northern R. R., Marysville to Oreville.

O. Map of survey, Sacramento to Benicia.

P. Map of survey, Marysville to Benicia.

Q. Map of survey, Folsom to Placerville.

R. Smith's map of survey for Canal up North Fork of American River to Lake Bigler.

S. Connected map of Lieut. Beckwith's surveys, showing the topography, &c., from Benicia to Salt Lake.

T. Map of Capt. Simpson's route to Camp Floyd.

U. Large map, compiled in office of Secretary of War, showing country west of the Mississippi River, with all the surveys for Pacific Railroad laid down thereon.

V. Smaller map of routes, as above.

W. Map of Rancho del Paso, through which our line passes.

X. Map of City of Sacramento.

Y. Map of survey across Sacramento Valley.

Z. Degroot's map of Warshoe Mines, also Pierce's map of Washoe.

PROFILES.

a. Sheets, 1 to 34 inclusive, working profile of line as run (horizontal scale, 400 feet; vertical scale, 30 feet per inch).

b. Profile of line to Dutch Flat (horizontal scale, 500 feet per inch; vertical scale, 50 feet per inch).

c. Two Profiles of line reaching from Lincoln to Truckee River (horizontal scale, 1,000 feet; vertical scale, 100 feet per inch).
d. 1 *Profile*, extending from Sacramento to Big Bend of Truckee; also showing a section of Washoe Mountains, on a line from Stout's to Fort Churchill (horizontal scale, 11,000 feet; vertical scale, 600 feet per inch).
e. Copy of same, for filing in Secretary of State's office.
f. Profile of Leut. Beckwith's line, Salt Lake to Fort Reading, containing profile of Noble's Pass.
g. 2 sheets of profiles of various Southern passes across Sierra Nevada (published in Secretary of War's office).
h. Barometric profile of reconnoissances in Sierra Nevada Mountains, viz.: Georgetown route; Dutch Flat route; Henness Pass route via Nevada.

Also, a set of Pacific Railroad Reports, and all the maps, profiles, &c., relating thereto—published by United States Government.

Our levels indicate that many of the passes in the Sierra Nevada Mountains will be found, upon actual survey, much higher than they have been represented.

The estimates of business, and revenue of Road, will be deferred to another time, in consequence of delay in procuring the statistics of the Washoe trade and business.

In conclusion, I take this opportunity of expressing my obligations to Messrs. EDWARD JUDAH, Assistant in charge of Party; JOHN R. BROWN, in charge of Levels; H. T. HALL, Topographer; for the able and satisfactory manner in which they performed the arduous duties assigned them; also to WM. S. WATSON. Esq., Chief Engineer of California Northern Railroad, for valuable assistance in office; to Dr. D. W. STRONG, of Dutch Flat, who accompanied me in my reconnoissance last fall, who was with me during the entire survey, and whose experience in and knowledge of the mountains was of the greatest assistance, and contributed to the success of the survey; also, to S. B. WYMAN, Esq., of Virginia; Mr. NEIL, of Neilsburgh; Mr. APPLEGATE, of Empire Mills; Messrs. EGBERT and BRICKELL, of Illinoistown—who were with me on portions of the route; to CHAS. MARSH, Esq., of Nevada, who accompanied me on the reconnoissance *via* Nevada and Henness Pass; also to Messrs. JOHN SHAW, of Mormon Island; and D. W. MCKINNEY, of Georgetown—who accompanied me on Georgetown reconnoissance; also, to Mr. STOUT, of Stout's Crossing, Nevada Territory; F. MOORE, Esq., of Dutch Flat; and R. P. ROBINSON, Esq., of Sacramento, for courtesies extended.

Very respectfully,

THEODORE D. JUDAH,
Chief Engineer Central Pacific Railroad of California.

BENTON'S

25,086

INV. 1898

POLICY OF SELLING AND DEVELOPING

CALIFORNIA SEP 30 1888 STATE LIBRARY

—THE—

MINERAL LANDS,

AND THE NECESSITY OF FURNISHING ACCESS TO THE ROCKY
MOUNTAINS BY THE CONSTRUCTION OF THE

NORTHERN AND CENTRAL
PACIFIC RAILROAD.

—BY—

EDGAR CONKLING.

CINCINNATI:
CALEB CLARK, PRINTER, S. W. CORNER THIRD & WALNUT STS.
1864.

CALIFORNIA
SEP
30
1869
STATE LIBRARY

MINERAL LANDS.

We hold it to be the duty of every loyal citizen, of this great, but temporarily distracted country, to contribute something, that will not only sustain the Government in putting down this unholy rebellion, but secure a policy that shall be inviting to millions now being repulsed from Europe, and that will fully and speedily develope every material element with which nature has endowed this land.

No country, in point of climate, latent wealth, laws, and institutions favorable for the full development of true manhood, can compare with these United States of America.

Civilized Europe gives good evidence that such is the impression there, judging from the migration to this country.

However much nature may have done for a country, its hidden elements may remain locked up for centuries, through a wrong policy.

Mexico is endowed with every element essential to her being a great and prosperous nation. Her Spanish mining laws were made three hundred years ago, that they might support the Spanish nobility, through the labors of an oppressed and conquered people. They were enforced, regardless of the principles essential to the development of the country and the good of its population. The mineral lands were retained by the crown, any one being authorized to discover and to a limited extent to work the mines subject to a tax of one-fifth of the products, together wiih the free privilege to use the wood, water and grass of the lands pertaining to them. The result of thus withholding from the people the ownership of the material elements of the country, and of the soil, has been to discourage industry and skill in mining; the principal support for all other occupations.

Hence the poverty ignorance and disloyalty of the inhabitants. Had the people for the past three hundred years owned the soil and controlled its contents, and mining not been discouraged by burdensome taxes on the products of the mines, Mexico would this day have been one of the strong and prosperous nations of the world. As it now is, if the Jaurez Government would decree the minerals to the soil, and that the public lands as well as the land of traitors should be divided among those who would enlist in exterminating the invaders, Mexico would soon be redeemed, and annually exhibit to the world five times its former greatest productiveness.

"Hittle," the author of a recent work on the "Resources of California," an eminent lawyer of fourteen years resident in that State, furnishes valuable and reliable facts and arguments, worthy of the immediate consideration of our Government, and of Congress.

The question of preserving a needed relative proportion of gold and silver to all other values, and to our commercial wants, may be considered *the great financial question of the age;* affecting alike all nations. In order that it may be properly understood, it is essential that we point out at some length the defects in these respects of the present policy of our Government. In fact, the mining of the precious metals, since the days of Solomon, except to a very limited extent, has been under the most unfavorable circumstances. Comparatively, but little has been done by the real owner of the soil and its contents; and where done in that way in England, as Benton shows, it has prospered vastly greater than under the usual policy of governments, retaining the minerals, and of working the mines by prisoners or slaves; or by permisson of freemen to work, as in Mexico, &c.

To the policy of yielding the minerals to the soil, and selling the mineral lands in the British Islands, England is mainly indebted for her present greatness and prosperity.

It will be our endeavor to show that the same policy in this country will do as much more for us, as a people, as our native wealth exceeds that of England.

The wisdom and foresight of the late Hon. Thos. H. Benton are clearly demonstrated by the sad experience and failure of our present policy in California, as shown by "Hittle," page 437—453.

Mr. Benton, in his speech in Congress, advocating the sales of mineral lands, (see Abridged Debates of Congress, for 1823, vol-7, p. 364,) says:

The national Government, by these acts, having concentrated into our hands the possession of the mines and salines, undertook, in the year 1807, to reap the fruit of its able policy. For this purpose, the luminous idea was adopted of converting itself into a national landlord, the miners into national tenants, and deriving a revenue from salt-water boilers and lead ore diggers. This system was adopted in 1807. Fifteen years have since elapsed, and certainly fifteen years of annual experience is sufficient to test the vice or virtue of all money-making schemes. What has been the fruit of all this monopolizing and leasing system? Have any leases been taken? Yes, many. Has any lead been dug? Yes, millions of pounds weight. Have any rents been paid? No, not a dollar, not one cent. But, perhaps, it may be thought that valuable improvements have been made, the benefit of which will inure to the Republic, and compensate for the loss of rents. I answer, none. No improvements can be made at salines, except by sinking wells or boring holes some hundred feet to the strata of salt or streams of strong water which lie below, neither of which has been done at a public saline. No improvement can be made at a mine, except by sinking shafts, opening galleries, providing ventilators and hydraulic engines, and constructing permanent furnaces; not one of which things has been done at a public mine, or ever will be done by a tenant or lease, for years.

"The spirit of tenanting is everywhere the same, it is a spirit adverse to improvement, always bearing toward the injury of the property in possession, and always holding back from the payment of rent.

"This spirit has had its free range with mineral lands of the United States, where no improvement has been made, no rent paid and great injury done in the destruction of timber, and in ravaging the ground in search of minerals. Not even a mine discovered. Of the fifty or sixty public mines enumerated in the report from the War Department, not one was known as a mine at this time.

"They were nothing but superficial digings exhausted or abandoned in a few weeks or months after their first discovery.

"The veins and masses of ore which approached the surface have alone been tenanted. Miners call this 'picking at the eyes of the mine,' while the body lies at the distance of some hundred or thousand feet below. In fine, the fruit of this whole system has been injury to the national treasury, and a resource to foreign powers to supply us with the articles of which God, in his providence, has given us more than he has to them.

"Mr. Benton appealed to the Senate to say whether it was not time to change this system. * * * * *

"To continue it will be to perpetuate the relation of landlord and tenant throughout the vast extent of the mineral districts of the vast Republic; that landlord being the Federal Government, and holding its domain and body of tenantry within the limits of a sovereign State. I deny such a power to the Federal Government. I take my stand upon the words of the Constitution, and deny to the Federal Government to hold land in any State except upon grants made and cases enumerated and purposes specified in the Constitution. I speak of permanent ownership, not of the transient trustee possession which is necessary to a fair distribution of the property, and which is recognized in the compacts with the new States, by an agreement not to tax the public land before it is sold and for five years thereafter.' I deny to the Federal Government capacity to hold to a body of tenantry, within the limits of any State.

"The monarchies of Europe have their serfs and vassals, but the genius of the Republic disclaims the tenure and the spirit of vassalage, and calls for freemen, owners of the soil, masters of their own castles, and free from the influence of a foreign power. But if a doubt can be entertained of the right to hold lands and tenantry within bosoms of the States, none can exist as to the evils of such a practice; even if confined to minerals and salines, the mischief must be great.

* * * * * *

"But what is the effect to the States in which these things shall be done? Population retarded, the improvements of the country delayed, large bodies of land held free of taxation, and their elections more or less influenced by the presence of men holding their leases at the will of the Federal Government. All this is bad enough but the worst is yet to be named. The foundation of the whole is a monopoly, odious of itself, and aggravated in this instance from the nature of the articles monopolized.

* * * * *

"I trust that enough has been said to show the bad policy of leasing. Shall we then adopt the alternative proposed by the bill, and deliver up the mines and salines of the Republic to the pursuit of individual enterprise, to the care of individual interest guided and sustained by the skill and capital of those who may choose to hold them? I maintain it to be our true policy to do so, and that the Government will find its indemnity in the price which will be paid for them, and the increased wealth of its citizens; which is, in fact, the wealth of the Government itself. *Besides, without a freehold in the soil, the experience of all countries proves that the riches of the mineral kingdom can never be discovered or brought into action.*

* * * *

"All this is now proved on the mineral lands of the United States in Missouri. Fifty or sixty mines have been opened, exhausted and abandoned. Yes, within the space of a few months, a mine is exhausted, while in England mines are now worked which were opened two thousand years ago. The reason is obvious. The English miner, having the freehold of the soil, husbands and improves his property, and follows the vein downward even to the distance of two thousand feet. The American lessee can only take what he finds on the surface of the ground.

"All over the world mineral wealth has been discovered, either by accident or by the persevering labor of the *owner* of the soil. It is needless to multiply examples to prove the assertion. Every Senator's reading will furnish him with a multitude. Two only will I mention—the discoveries of the great copper mines of Anglesea, and the salt mine in Chelsea. The former, though the richest in the world, and furnishing at this day more copper than all the mines of Europe put together, and seated in the bosom of a country settled for several thousand years, was only discovered at the beginning of the last century, though known as a saline to the Roman soldiers, when Britain was a province of the Roman Empire. This vast salt mine is only one hundred and twenty feet below the surface of the earth, and then commences in strata sixty feet thick, and yet was never discovered till the earth was penetrated by *the owner* of the soil.

"*But change the tenure, create a fee simple in the soil, and what may not be found.*

"The example of England presents itself to us. In the early ages her base metals were considered as too precious for the people, and were reserved as crown property. Her mines were leased out; and the great tin mines of Cornwall brought the imposing sum of one hundred marks per annum, and the rest in proportion. In the reign of Philip and Mary this policy was changed. The mineral kingdom, by an act of Parliament. ceased to be a monopoly in the hands of the crown. It was given up to the skill, and capital, and industry of individuals, and the result has been that the iron, lead, copper, tin, coal, and salt of England have carried the wealth and power of the British Empire to a hight to which the mines of Peru and Mexico can never exalt her. *And let us follow her example.* Not the example of her dark ages, but of that enlightened period which has made of a small island in the sea one of the richest and most powerful empires upon the face of the globe."

Notwithstanding such advice, proceeding from a wise and practical statesman, and sustained by such facts and experience, our mere party politicians, ignoring it all, twenty years after sought to enforce the same objectionable policy thus exposed, on the lead mine country. The people resisted the payment of taxes on the products of the mines, killed the agents of the Government; made it cost more than all the receipts. and at length forced the Government to adopt the true policy of selling the mineral lands, after which the country prospered, and all was again peaceful.

A similar attempt was made to retain the copper lands, which was also abandoned. The policy recommended by Benton is the only one to which the American people will submit.

The Government may, from want of wisdom, protract the settlement of the question, until the evils, as in California, become so glaring as to force the question on the people; but the time is not far distant when the same policy that obtains here, must be extended to the Pacific.

There are many who can see the propriety of the Government selling farming lands at one dollar and twenty-five cents an acre, or disposing of lands under Homestead laws, that are worth twenty times that to the farmer, but who cannot see the propriety of selling at public sale, to the highest bidder, to actual mining settlers, the rich mining lands of the Rocky mountain country.

In either case, the lands are only valuable, because of the capital and labor used in developing the soil, or the minerals. One is as much entitled to be favored by the Government as the other.

Or, if we mark a distinction, the miner of the Rocky Mountain country, away from society and from home, developing a metal that does more to stimulate every other interest of the country than any other product of labor, is entitled to the highest favor.

The facts and arguments furnished by "Hittle" are invaluable to our Government, and fully confirms Mr. Benton's policy. "Hittle," says, p. 437:

"The welfare of every civilized State requires a permanent population, a well regulated society, a steady business and a secure investment of capital proportionate to the industrial ability and production of the people. These requisites are indispensable to all national prosperity. Their want, if long continued, must inevitably be followed by national ruin.

"They are wanting in a large portion of California.

"In the moral and social, as well as in the physical world, cause and effect are inseparably connected; adequate means never fail in leading to correspondent ends; prosperity or ruin comes not by mere chance, but is the necessary result of the adoption of good or evil counsel. The ill repeated society and unsound condition of business in our State, are traceable mainly to the insecure tenure of our lands; and as a necessary means to attain social, commercial and individual health, we must have perfect land-titles.

"It is a necessary consequence of the want of secure land-titles in the mining districts, that the inhabitants should be unsettled. There is nothing to fix them in any one place, while many motives inspire them to frequent removals, and the result is, that a considerable portion of our mining population is truly nomadic in character.

"Most of them have poor claims, or none at all; and they enact laws, or establish customs, having the force of laws, that all claims shall be small, usually not more than one hundred feet square. These small claims are worked out in a month or two, or at most, in a year or two, and then the miner must go. Perhaps he will find his next claim within ten miles, perhaps not within fifty. When he gets a claim he may not be able to work it out; he must not only occupy his claim, but he must work it. If he absent himself from it more than three days, during the season in which it can be worked, for other cause than sickness, it becomes forfeited to whomsoever will seize it.

"In no case can he who mines in the river-beds, banks, flats or gulches, consider his claim a home for life; in one case out of a thousand it may employ him for ten years. Quartz and tunnel claims are more lasting, and many of them will not be exhausted in a life time; but the miners employed in these are a small portion of the total number.

* * * * .

"He has no title to the spot where he dwells. No substantial improvements. No property of any kind, save such as he can carry on his back at one load. The world never saw such a people of travelers as the Californians. There are now about three hundred and fifty thousand white inhabitants in the State, and more than two hundred and fifty thousand others have gone home during the past twelve years—four-fifths of them never to return.

* * * *

"Another evil effect of the want of secure land titles, and the consequent unsettled character of the population, is the want of good homes and substantial improvements of all kinds. * * *

"The wandering character of the population, and the want of permanent comfortable homes, render the mines an unsuitable place of residence for families.

* * * *

"If there were no other evil than this scarcity of women, traceable to the present tenure of the mineral lands, that one fact would be enough to settle the question that the mines must be sold. * * *

"A community of American families must have permanent homes; they must own the land in fee simple; and there cannot be a large community of families in the mining districts of California unless the lands there be sold.

"Another evil effect upon the present system of land tenure in the mineral districts, is to be found in the mining countries. Most of the steady, prudent, economical men leave the State with more or less money, while the dissipated, thriftless fellows remain; the latter class increasing in numbers, the former decreasing every year. The only means of fixing and increasing the former class, and giving them the proper influence in society, is to give them permanent homes. It is one of the great evils of the tenant-at-will system, that there is little security for the investment of capital. Land should be the main stock of wealth, and the main basis of credit, and the increase of its value with increasing population, should be one of the main sources of riches in any new country; but of this kind of property the mining districts are deprived by an unwise policy. As it is now, it is almost impossible to induce capitalists of San Francisco to invest money in, or loan money in mining enterprises, they have learned by bitter experience that there is little safety for money invested in canals and quartz mills, where there is no title to the lands save possession, which may be lost by abandonment or forfeiture at any moment. The consequence is, that the permanent improvements in the mines are rare in comparison with the number which there would be if the mineral lands were sold; and where money is borrowed to make such improvements, extravagant rates of interest are paid. As a result of the comparatively small amount of capital invested, and the lack of security for large investments, of money in mining enterprises, there is little demand for labor, and the State is full of poor men anxious to get work, but unable to find anybody to employ them.

* * * *

"In regard to the certainty of success upon first arrival, California offers less encouragement to the immigrant than many of the States in the Mississippi Valley, and will not offer more until the tenure of lands in the mines shall be changed.

"Again the present system exercises a most prejudicial effect upon the finances of the State, and bears very unequally upon the citizens. The farming interests, where the inhabitants own the land, pay heavy land taxes, whereas mining claims pay no taxes at all. The result is that the taxation upon the men in the valleys is about three times as heavy as those in the mountains. The miners generally have no houses and no fixed property, and cannot be forced to pay taxes.

"The only way to equalize the taxation is to sell the mineral lands, and compel the miner to pay a tax upon his mine, as well as the farmer upon his farm. The offer of the mineral lands of the State, comprising about ten millions of acres, for sale, would present one of the greatest opportunities in the world for large numbers to secure great and certain wealth at a small immediate outlay. * * * * From the moment it is known that the mineral lands will be sold, California's regeneration will begin. * * * * After the sale, titles being secure, comfortable houses will be built, wives will be sent for, mining will be conducted economically and steadily, claims will be worked which now will not pay, our population will increase, and so will the yield of the mines. * * * The question of the sale of the mineral lands is then the question of the future of the State."

Such is but a portion of the testimony of Hittle. Let Benton and Hittle be fully understood, and every friend of his country will see the necessity of adopting a policy demanded by the exigencies of the times.

Had Benton's policy of 1823, to sell the mineral lands, been then adopted, and extended westward to the Pacific, as we acquired title to the country, the result would have been millions of permanent citizens engaged in permanent mining in the Rocky Mountain country, on their own soil, with scientific, costly machinery, producing manifold greater products of the precious metals than are now produce d.

Our present war, the war debt and taxes, as well as similar probable exigencies in the future, render it imperative upon our statesmen to adopt such an enlightened policy.

To what extent our Government may be compelled to issue evidences of its indebtedness, as a circulating medium, must depend on the length of the present and future wars, and the unseen complications that may arise from the efforts of corrupt politicians, in league with the Rebels of the South, to lessen confidence in their securities.

Just as is our cause, begetting the sympathy and confidence of the loyal people in our Government, yet it would be wise on the part of those whose duty it is to watchfully preside over our interests, to provide against any possible exhaustion of the confidence or the means of our people, in sustaining the value of Government securities, by adopting a policy, that will materially increase our population and the products of gold and silver.

An excellent article, on this subject, in the New York Observer, some week since, says: "There cannot be any doubt that coin is the safest money, or the safest and best basis for a financial medium of exchange, for one reason mainly, and that is that the civilized world has had and now has, perhaps, that impression. Hence it has become the standard of the value of property throughout the world. Yet, strange as it may seem, for the last one hundred years it has not been one hundredth part of the basis for the representatian of property. The property of the United States. in the last ten years, has increased more than two hundred times faster than coin. From 1850 to 1860, the real increase of property in the United States was near nine thousand milllons of dollars, while the specie increase for the same time was near thirty-five millions of dollars. There are twenty-nine States, in each of which the property has increased more than the coin of the whole world. In Ohio alone the increase of property has been almost seven hundred millions, nearly twenty times, faster than the coin of the United States, Illinois about twenty-one times faster."

These are important facts to be generally understood. If property was estimated at its selling value, its relative proportion to gold and silver coin, would probably be a little less than three hundred to one. This

CALIFORNIA STATE LIB

relative proportion is greatly on the increase, while the increased commerce of the country, and greater issue of paper money and Government securities require; if possible, that we should preserve a greater relative proportion than at present of gold and silver. If this is not done, will not gold and silver coin materially advance, and embarrass our Government and its securities, as well as commerce and trade generally? With these considerations, in view, what subject more imperatively demands prompt consideration!

It will not do to expend our time and means in refuting the general impression, that gold and silver coin is the best and safest money. However good our Government securities, may now be, arising from the confidence of the people, there are contingencies pertaining to that confidence and the value of such securities, that have nothing to do with gold and silver.

If our Government wants to retain that confidence, and sustain the people with means to furnish the Government with all needed facilities, it will favor the adoption of Benton's policy of speedily putting the mineral lands of the great "Wall Street" of this continent into the hands of millions of individuals who will soon produce, not sixty millions of dollars per annum, but at least five hundred millions per annum, under the most favorable circumstances.

If California, with its sixty millions per annum, saved our country from bankruptcy by an extension and increase of our railroads, our commerce, and our manufactures, and by so enriching the people, enabled them to support the Government with means, credit, and railroads, to break down this Rebellion, what would not the policy we here urge on the Government do for us?

We claim the following as some of the results of such policy:

1st. It would materially increase our population from Europe, and thus strengthen us against internal and external foes, and with that increased wealth, they should bring with them, to mine, to make railroads, and to do business with.

2d. The revenue from importations would be correspondingly greater from the above considerations, and from the increased wealth arising from the greater productiveness of the mines.

3d. The sales from the mineral lands would produce many millions of dollars in money, the interest of which and the taxes on the lands would be more than equal to the cost to the Government of the maintainance of the Territories.

4th. It would do away with the costly military protection against Mormons and Indians, in our attempts to settle the Rocky Mountain country; preserve to us our Pacific States, and their increased commerce; neutralize the political power of the Mormons, whom it may yet cost us fifty millions of dollars to subdue; strengthen our white settlements against the Indians, resisting the gradual encroachments from all directions upon their sections; create the necessity for Pacific railroads, and materially hasten their construction, itself worth millions annually to the Government; lessen the aid Government will otherwise have to furnish before getting Pacific railroads; and, in addition to all, give much greater value to Government lands generally.

5th. It would stimulate every interest of the country, giving greater value and salability to property; and by increasing the basis of taxation, it would render our war debt and its taxation light, lessen exchange and interest, sustain Government securities at par, and if needed to an extent equal to the debt of England, prevent financial crisis, and induce a greater foreign immigration into the North, to compensate for the large migration that must take place from the Northern to the Southern States as we gain possession of the States now in the Rebellion.

All this, and much more, is practicable, with well disposed, and loyal statesmen, because that nature has made it possible for us to draw on our natural disposits of unlimited wealth, by a liberal elightened costless policy in harmony with the spirit of our institutions. There can be no possible objection to such a policy. It already obtains east of the Mississippi river, and why should it not west of that river.

There are not a sufficient number of Rebels in Congress to resist it, because it would result in making *free States.* Brigham Young may resist it, because it will defeat his purposes of permanently establishing his government, so opposed to ours.

Copperheads may resist it, seeing it will make this country *the* great commercial country of the world, and sustain greenbacks and other United States securities. But in order to fully carry out this policy, every interest of our country will demand of the Government to speedily provide access to the Rocky Mountain country, not only by the Central Pacific Railroad, but also by the *Northern.*

The New York *Tribune*, of Dec. 10, very justly disapproves of the views of the Secretary of Interior in his recent report. The *Tribune* says:

"The Secretary is probably right in seeking to make our mines of gold and silver contribute 'directly to the replenishment of our sorely over-burdened Treasury; but how will he do it? To any and every scheme for filling the Rocky Mountains and the desert wastes of Idahoe and Nevada, with toll gatherers from the mines, we are inflexibly opposed. It may look ever promising on paper, but it will prove a vexatious nuisance, without adding one stiver to the National resources. The scheme has been thoroughly tried with regard to the lead mines of the West and the copper mines of Lake Superior, and proved a costly operation. But let an act be passed forbidding the exportation of Gold in any shape but that of coin or minted bars; and requiring all gold minted in this country to be sent to the National mints for coinage or assay, and imposing a moderate tax or seigniorage on such assay, and something may be made of it. We shall soon be digging $1,000,000,000 per annum of gold and silver, on which five per cent. seigniorage ought to pay the expenses of all our mints, and put four millions net into the Treasury. In that shape, the mines may be made directly productive to the Treasurer probably not in any other."

In seeking to expose the policy of the Secretary of Interior, exploded by Benton, in 1823, and which proved a disastrous failure in Mexico, California, &c., the Tribune recommends equally as objectionable a policy to rely on for a revenue, as he makes no adequate provision to induce permanent settlers to occupy and mine the Rocky Mountain Country.

That "one thousand millions of dollars," per annum may, in, a few years, be the annual product of that country, should the government give access to these lands by rail-roads, and yield a fee-simple title to the lands, a policy which we now urge upon the people to require of the Government to adopt, there can be no doubt. Not a quarter of that amount may be expected under the policy now in operation, or as recommended by our government, or the Tribune.

Perhaps nothing will force the consideration of this great national question upon our government, until a long continued and greatly increased disparity in value between gold, and our government securities compels our people to require of the government to adopt the same policy west of the Mississippi, that now works so well east of it.

Our government is doing great injustice to every interest of the people, while largely increasing its indebtedness, in making no adequate provision for unlocking the untold wealth of our mining country, so essential to sustain the par value of its securities. In this respect, our government has shown itself totally incompetent to develope our internal resources, and it becomes necessary for the people to act and make it the great financial question of the day.

We think we have clearly shown the practicability of speedily and largely drafting upon the natural deposits of the precious metals in the Rocky Mountains—themselves constituting the main incentive for the settlement of the real "Wall street" of this continent.

We think the indications of Providence point out to this government, the true method of consummating our national greatness, in point of populousness, wealth, mining, manufacturing, commerce, general industry and public works, by the adoption of Benton's policy of selling our mineral lands, from the Mississippi to the Pacific as fast as practicable.

Such a policy obtains east of that river, and is in perfect harmony with the spirit of our institutions, the natural promptings and experience of men, and the exigencies that are upon us, requiring us to do something to recuperate every interest of our people and the Government. If a different policy to this must obtain west of that river, its advocates should give good and sufficient reasons for it. The present negative policy of the Government, in regard to the mineral lands, is destructive to every interest of that whole country.

The character and condition of the Governments and countries of Europe are repulsing millions of their people, who are panting for liberty, and a home upon which to expend their energies and affections.

Our Government and country can alone furnish the requisites of those most laudable impulses.

It only needs the prompt action of our Government in adopting the policy we are advocating, to thus populate and develope our great country, from the Mississippi to the Pacific, and thus hasten our manifest destiny.

We think we cannot as a government, or a people, be true to our own interests or to the best interests of the world, if we do not promptly discharge the trust a gracious Providence has so clearly reposed in us, viz: that of making it practicable, through those millions it is our duty to invite to share with us, to develope the mineral wealth so lavishly bestowed upon that vast region of country, and by which we may become, what nature indicates; the first commercial power of the world.

But in connection with that policy, it is very evident that the Rocky Mountain country must be furnished with railroad facilities, connecting it at different points, with the eastern and western extremities of our continent.

The systems of Benton and Whitney must be blended, each being mutually dependent on the other. Whitney's furnishes access to the mines by railroads, Benton's furnishes the business for those roads.

Government being the principal proprietor, and deriving the chief advantages accruing from this policy, can alone furnish the needed encouragement to secure such railroads. It has wisely aided the Central Pacific Railroad Company, who, with needed modifications of their charter, will gradually progress to connect the various lines centering at either end upon their road.

We cannot, under present circumstances, afford to lose the benefits that must accrue to the Government and general interests of the country from a policy which justly, as well as wisely, requires of us as much aid for the construction of the Northern Pacific Railroad as for the Central. The mere pecuniary value of the aid to be furnished cannot be a hundredth part of the value of the benefit that must result.

There are peculiarities appertaining to the practicability of speedily constructing the Northern Pacific Railroad, that do not belong to any other of our Pacific railroad routes. These peculiarities have either not been understood, or they have been ignored by those opposed to a Northern route, because, of the tendency of such a route to create *Free States* on its line. Hence, years have been lost, in putting the Northern Pacific Railroad into operation.—These peculiarities we will now point out, with the hope that they may be seen and be so appreciated by the present Congress, as to induce such legislation as will make them available.

It is well known that a want of capital has proved to be the greatest barrier to the speedy and successful prosecution of railroads. Many of our short railroads, thro' well settled, wealthy, productive districts have been delayed for years, and if finally resuscitated by new parties, it has been only at a total loss to the first stockholders, of all their stock. If such is the case with short railroads, and in such districts, how important in legislating for Pacific railroads, of two thousand miles long, runing through thinly settled countries and among hostile Indians, regions in which railroads are expected to anticipate a business of their own creation, that the main point of consideration should be that we legislate in harmony with the interest of those we have reason to expect will furnish the capital, as well as adopt a policy that will settle the country. If those points are lost sight of, we may continue, as heretofore, securing charters of no force.

It is well known that our Northern Pacific Railroad route, unlike either of the others heretofore surveyed, will not only promote the interest of our own territory, but also that of the British Possessions, to the Pacific. The peculiarity of the position of our own territory, west of our national boundary line, at the western terminus of the Canada Grand Trunk Railroad on the Detroit river, and between that portion of Canada and the British Red River Possessions, renders it greatly desirable to British capitalist owning that non-productive railroad, that our Government should grant them six sections of land per mile to the Straits of Mackinaw, thence to the west end of Lake Superior, and from there to Puget's Sound on the Pacific, a route entirely through our territory, the same extent of aid with that furnished to the Central Pacific Railroad Company.

Such inducements to a present company, having large and diversified interests to promote, such as present investments in railroads—territorial and commercial interests along the whole line from the Atlantic to the Pacific, and at either terminus and with unlimited means and credit at command, without those usual delays in negociating for money that must attend the construction of either of the other Pacific railroads, or that do attend the construction of ordinary railroads, would be a guarantee that the work would proceed without delay, and be finished years in advance of either of the other Pacific railroads; itself worth to this Government millions annually.

To show that it is the true interest of the owners of the present non-productive Grand Trunk Railroad, to thus extend their road, in order that they may make it productive, we will quote from Hunt's Merchants' Magazine, Vol. 42, May, 1860, page 486, a portion of a report on the Grand Trunk Railroad, by the Hon. W. B. S. Moore, Consul-General of the British North American Provinces, dated Montreal, January, 1860:

"The completion of the Victoria Bridge, which must be considered, mechanically at least, the great work of the age, renders it proper that I should communicate to the Department such information as I am possessed of relative to the railroad system of Canada, and its bearing upon similar interests in the United States.

"The Grand Trunk Railroad, of which this bridge constitutes a part, extends from River de Loup to Port Sarnia on the St.

Clair, and from Sarnia or Port Huron, on the opposite shore, it has caused to be constructed, under its control, a railroad to Detroit; and by a lease of the line from Island Pond to Portland, Maine, it has a united line of the same guage under one management, commencing at Detroit, with two outlets to the sea, one at Portland, Maine, the other at Quebec, or the River de Loup. The whole extent of this line is about eleven hundred miles.

"To its construction, the Province of Canada has contributed sixteen millions of dollars; the balance of the capital has been advanced by shareholders in England, and the line is now in working order at a total expense of sixty millions of dollars.

"Efforts are now being made to extend this line to the eastern British Provinces by the way of Lake Penisconata and the river St. Johns, keeping its track entirely within the provincial boundaries.

"Its *main resources must be American business. Its local business cannot support it.*"

"The facilties of internal navigation will draw largely upon our Western trade, and had it not been formerly the policy of the British Government to exclude American influence from Canada; and to keep the country shut out from external commerce, the great natural outlet of the West, the St. Lawrence, with its immense locks and canals, would have borne our commerce to the Atlantic, as it draws the waters of our lakes. That policy has changed. *The government of this province and the capitalists of Great Britain are united in their efforts to make their canals and railroads the thoroughfares of Western Commerce to the Atlantic.* They have built across the peninsula of western Canada three roads to accomplish this result. The Great Western Railroad, from Windsor, opposite Detroit, to Hamilton, Canada West; The Northern Railroad, from Collinswood, on the Georgian Bay, to Toronto; the Buffalo and Lake Huron Railroad, from Fort Erie to Godderich, on Lake Huron; all of these, except perhaps the latter, connect Lake Ontario, in the summer season, with lines of propellors running to Montreal and Quebec, and connecting on Lake Huron with steamers running to Chicago, Milwaukee and our Western cities. That the result of these efforts will be to cheapen the transportation of Western produce there can be no doubt.

"It is equally certain that there will be a large diversion from our canals and railroads of their legitimate business, from which they must suffer severely, unless the developements of the 'Great West' shall prove for the future, what it has shown in the past, that its growth is more rapid than the increase of facilities of internal transportation, and that its surplus crops will, demand every outlet which nature has made or man can make, to a market, and afford to all a remunerating business. Such a result is to be desired.'

From this important document we gather the following information:

1st. That a railroad costing, probably, not less than one hundred millions of dollars, by the time of its completion to the Atlantic, will be and must ever remain non-productive, unless it can increase its business by the addition of American trade.

2d. That British capitalists, mainly owning it, feel great anxiety to make it productive by constituting branches, extending it to Grand Haven, etc. These endeavors after trade, are all well enough, but too limited in their extent to accomplish the wishes and purposes of the persons concerned.

3d. That British capitalists, have the fullest confidence that in developing the Northwest, every possible outlet that man can make on American or Canadian territory will have its importance.

This is the proper view to take of it, and there should be no fears that in thus extending the Grand Trunk Railroad to the Pacific, the trade of it would monopolize all the Pacific, and local trade of a country extending from Lake Superior to the Pacific, a distance of two thousand, miles, thus leaving but little to be done by the Norhwestern system of railroads, uniting with it beyond St. Paul. If one-tenth of the travel on the road, leading from Lake Superior, west toward the Pacific, should pass eastward over the Grand Trunk Railroad, it would severely tax its machinery and capacity. Much as it would pay the Grand Trunk Railroad Company to extend their road to the Pacific, the Northwest and its system of railroads have much more to make by their so doing.

All local jealousies should cease, and every interest unite in enlisting capital to center on that Northern Pacific route, each trusting to secure their proportion of a trade, which capital thus invested alone can create. As well might one solitary railroad company hope, by a double track railroad, to monopolize all the travel between the Mississippi river, north of the Ohio, and the city of New York, as for the Grand Trunk Railroad Company to hope to monopolize the travel on a double-track road, as proposed to the Pacific, of about twenty-five hundred miles west of the Detroit river.

The article in Hunt's Merchants' Magazine for May, 1860, p 553, on Pacific Railroads, recomends at length this policy, adding valuable facts and arguments worthyof serious consideration, by all who are interested in this great National question.

If now the Northwest, from petty jealousies and the want of that enterprize which has hitherto so distinguished its rapid growth, should oppose this policy, it must retard the growth of the country west of the Mississippi for at least fifty years. There are some in the Northwest, that hope to secure foreign capital to connect St. Paul with the Pacific, without providing for the continuation of the Grand Trunk, as here proposed, to the west end of Lake Superior. Unless the English interests can be made thus continous, they have but little to eulist them, that being the only route they could adopt. If they should undertake the project, they have so much at stake, other than what they receive from the Government, that with means at their control, they would before, ten years, complete a better road than others could make.

If these observations are just, is it not the duty of Congress to promptly provide the needed charter? If this project is desirable, let those opposing this policy, present some other, at least as feasible, to secure the end.

It must be admitted that either Pacific Railroad Company will depend mainly on foreign means, because to be had cheaper.

But it may be well to consider the effect of delay in this great matter, upon sectional feelings or otherwise.

We claim that unless we thus promptly enlist British capitalists to do what it is so manifestly to their private interests that they should do, we shall probably not only lose *our* Northern Pacific Railroad, but invite the English Government to make its own Pacific Railroad, entirely through its own territory, keeping north of Lake Superior. It must be admitted that the cost of such a work to that Government would be small compared to the results to that territory and to the British commerce on the Atlantic and Pacific oceans. If we can commit private English capitalists of great infiuence to the policy we propose, there would be less inducement for the English Government to make a road exclusively on British territory.

We will puote from a Congressional Document from our Treasury Department, June 20, 1862, entitled "Relation between the United States and Northwest British America," p. 9:

"1858. Sir Edward Bulwer Lytton, proclaims, in the name of the Government, the policy of continous colonies from Lake Superior to the Pacific, and a highway across British America as the most direet route from London to Pekin and Jeddo."

"1858. A report to the New York Chamber of Commerce announces that the region of Lake Winnepeg, like the valley of the Mississippi, is distinguished for the fertility of its soil, and for the extent and gentle slope of its great plains, watered by rivers of great length, and admirable adapted to steam navigation. It will, in all respects, compare favorable with some of the most densely peopled portions of Europe. In other words, it is admirable fitted to become the seat of a numerous, hardy and prosperous community. It has an area equal to eight or ten first-class American states. Its great river, the Saskatchewan, causes a navigable water line to the base of the Rocky Mountains. It is not at all improbable that the valley of this river may yet offer the *best route for a Railroad to the Pacific.*"

Page. 20. "Jas. W Taylor, Esq., of St. Paul, special agent of the Treasury Department, writes July 10, 1861, as follows: "Having reason to believe that what is known to the English and Canadian people as the "Red River and Saskatchawan districts of British America" will be speedily organized, with the powerful co-operation of the Hudson's Bay Company, as a crown colony of England, and that active measures for its colonization in the interest of a continental confederation of the provinces, and a *railroad* from *Lake Superior to the Pacific, north of our boundary, will promptly follow.*"

Page 22. "And this country is not only valuable in itself, but valuable for that to which it leads. The distance from a given point on our side of Lake Superior to navigable waters on the Frazer river, in British Columbia, does not exceed two thousand miles, about twice the distance between Boston and Chicago. It has been shown by every explorer how, with some inconsiderable aid from art, a continous steamboat navigation might be obtained from Lake Winnepeg to the base of the Rocky Mountains. By these aids and corresponding improvements on the other side of the mountains, Toronto might be brought within ten or twelve days of British Columbia.

"*But there is a more important consideration still connected with the territory,* *for we know that through its prairies are to be found the shortest, and best railroad route to the Pacific.*"

Mr. Taylor writes, July 17, 1861, page 28:

"I anticipate also, if further explorations shall attract the attention of the world to the sources of the Saschatchawan and Athabasco in the same degree as in 1858 to the Frazer river, that the scale will be decisively turned in favor of the following measures, which are even now prominent at London:

"1 An act of Parliament organizing a crown colony northwest of Minesota, with an inhabitable area of 300,000 square miles.

"2. *A Union of all the American provinces of England, having for a prominent object a common highway from ocean to ocean in British territory.*

"3. An overland mail, to be speedily followed by colonization adequate to the achievement and support of a *continental railroad*

"These measures do not require for their consummation a gold excitement; they are the natural and inevitable course of events; but a sudden transit of thousands of people to the region in question, however stimulated, would greatly hasten there accomplishment."

The Hudson Bay Company has been reorganized with a view to active operations. A mail route is being constructed to the Pacific, north of Lake Superior. English capitalists see that they have a country that will pay to people and develope at any cost, under the most liberal policy to be devised. We shall have strong competition in making settlements, as well as with our North Pacific Railroad, if made. We may be defeated altogether for many years, unless our Government offers much greater inducements to make up for the losses arising from competition from the British Pacific Railroad, and from the loss of their trade to ours. If the English make theirs, they will build up English cities on Puget's Sound, and thus monopolize the trade we should seek for, by the policy we here urge. Every year's delay of this matter, not only endangers our final success, but subjects us to millions of outlay for the want of the road, and injures every interest of the whole country.

Thus extend the Grand Trunk Railroad through the Southern Peninsula of Michigan to the straits, and it at once gives access by means of the railroads, now struggling through Ohio and Indiana to the interior lumber regions of Michigan, a work of much general interest, that it should be done. Extend this road, thence, to the west end of Lake Superior through the Northern Peninsula of Michigan and Northern Wisconsin, and it will develope a section of country that will soon become a new State, "Superior" richer in iron and copper than any portion of our country; a region simply needing an organization and to be controlled by men comprehending the requisite special legislation for a mineral State, which will call into use the waste water power of the Upper Mississippi river to manufacture iron for the two Pacific railroads, and for general purposes, creating a home market for our Northwestern farmers, and giving vitality to our Northwestern system of railroads—and so making us less dependant on foreign countries for imports and exports.

Extend this road further, to the Pacific, and what almost incalculable results will follow? The value of our public lands, the sales of the mineral lands; the increased production of the precious metals affecting by their increase all general interests; the preservation to us of our Pacific States, and the protection and promotion of the building up of our Pacific commerce, and Pacific cities; the stimulus afforded to preserve the usual growth of the Northwest, while heavy draughts are made on it to people the South; the saving of costly needed military protection from the Mormons, Indians, &c., in the Rocky Mountains; the wealth that will flow from foreign countries to mine, to make railroads, &c., all these and many other advantages, will greatly exceed the comparative pittance of fifty millions of dollars loaned, in time bonds, as the work progresses, and to be paid for in services rendered.

The actual outlays, and damage to general interests, in the past ten years, for want of having adopted this policy, are greater than the cost of an entire Pacific Railroad. It is safe to say that each year that this work is delayed, is equal to a dead loss of at least ten millions of dollars to the Government. In this condition of things, should we have a foreign war, and be able to retain our Pacific States at all, it would only be at an expense greater than three Pacific Railroads.

But necessity to avoid further losses has much more to do in creating public works, than practical wisdom. Hence, we may have to wait patiently for further sacrificies, before we can successfully urge this policy, as was the case of the military railroad now being made to Knoxville, Tenn., a road which was finally constructed, after we had suffered more for the want of it than its actual cost.

If the farmers of the North-west really desire enlarged ship canals in Canada and New York, let them favor a policy, which will so enlarge the trade of the North-west as to make such canals a necessity, and productive. No intelligent American should contend that the Government, having provided for the Central Pacific Railroad, had done all it was able to do, or all that the wants of commerce demanded. To contend that one railroad crossing the country midway between Mexico and British Possessions is sufficent for the wants of such a country, 2,000 miles across it, would be equal to contending for only one railroad between St. Louis and New York.

To contend that it is all the Government can afford to do, where such mighty results must follow, is equally absurd.

Our war and its debt has expedited the necessity for the great national policy of selling the mineral lands, and thus recuperating and protecting every interest of our people and our government, and so making us to be *the great commercial power of the world.* Nature has intrusted to us all the elements of greatness, to be developed when we have the brains and the enterprise to make them available.

There should be no objection to this policy by the friends of the central route. They have much to expect of the government yet, before their road is made. They will find it a longer and more costly route than the Northern, or than they expected, and with no foreign interests or capital necessarily centering upon theirs; hence, a friendly co-operation with the friends of the Northern route will be a guarantee to them of more speedy success. There need be no unfriendly competition between these roads. In the event of a war, internal or external, the government will have at least the choice of routes, and if trouble should again arise with the Mormons, and they destroy the Central route, in such a case the Northern road would still remain to be used. But before capitalists will assume to make either of these roads, they will require the proposed policy of selling the mineral lands in order to settle the country, warrant their construction, and give security to them when made. The old enemies to the north route, because of its making free States, are not now in Congress, and now is the time for the North-West to make up for the past, by legislating in harmony with a plan for the location of foreign capital on one of the two Pacific railroad routes. If foreign capitalists assume to make our north road, and we should chance to have a general financial crisis at home, the work by them would still progress greatly for general good; while an enterprise conducted by home means alone, must of necessity be delayed. In a war with England, this railroad would further be of unspeakable importance in furnishing access to the Straits of Mackinaw, for military purposes, and so guarding Lake Michigan.

Every Eastern State is largely interested in this policy. Every railroad pointing to the West would have a guarantee of increased trade. Every man holding a dollar of Government securities would feel more secure in the greater and more prosperous population, in an enlarged value of taxable property, and in the materially enlarged basis of gold and silver for paper money and Government securities.

There is not a solitary interest in these United States conflicting with this policy, unless it be that with the Rebels of the South, or that with the Mormons of the Rocky Mountains, who would be effectually rooted out as a political association, and that too in a quiet, costless manner. A recent correspondent at Salt Lake has referred to the fact, that Brigham Young would not allow of mining near there, fearing that it would draw in a population opposed to his rule. If there were no other reasons why the proposed policy should be adopted, that one should be sufficient, as it is impossible to expect the peaceful growth of our Pacific, States, or successful commerce with them, with such a corrupt and growing political evil as this, an evil at war with the best interests of society, on the direct route to the Pacific.

It would be an enduring credit to the coming Congress, to honor the names of Benton and Whitney, by inseparably cementing their ideas with the exigencies of the times.

It would be better for our government, not only to give our mineral lands to actual mining settlers, that would develope the gold and silver, but to pay a bounty of five per cent on every dollar produced, seeing the effect on general interests rather than to prevent their develpement, by present exploded policy, so discreditable to present administration to favor, a policy that don't, nor can't produce a tithe of that we here advocate would do. Also, it would be better, in order to distribute the inexhaustible wealth of the Rocky Mountain range, that the Government promptly make the Northern and Central Pacific Railroads, at its own expense, rather than to adhere to its present niggardly policy of seeing how little it may assist, and accomplish nothing, as in the past ten years.

It is to our internal resources we must look to furnish employment, invite foreign population, promote manufacturing, commerce, general prosperity, and internal strength against foreign interfernce, and to make of this the great nation of the world. The administration that practically adopts the policy here indicated, is alone worthy of support.

If these ideas are valuable, should not our people at once petition Congress to adopt them?

EDGAR CONKLING.

CINCINNATI, O., *Dec.* 28, 1863.

FIRST ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

DENVER AND RIO GRANDE RAILWAY

TO THE

STOCKHOLDERS,

APRIL 1st, 1873.

Railways, Transportation.

PHILADELPHIA:
PRINTED BY J. B. LIPPINCOTT & CO.
1873.

CALIFORNIA STATE LIBRARY

MAP
of the
DENVER AND RIO GRANDE
RAILWAY
and
CONNECTIONS.
Scale 30 Miles to an Inch.
WYOMING
COLORADO
NEW MEXICO
UTAH
ARIZONA
TEXAS
MEXICO
UNION PACIFIC RAIL ROAD
Cheyenne
Sherman
Pine Bluffs
Julesburg
DENVER PACIFIC
KANSAS PACIFIC R.R.
Platte River
NORTH PARK
MIDDLE PARK
DENVER
Colorado Springs
Manitou
CAÑON CITY
PUEBLO
Cucharas
Trinidad
RATON MOUNTAINS
SANTA FE
Albuquerque
El Paso
La Joya
Fort Craig
Ft. Bliss
Las Vegas
Ft. Union
Cimarron
San Juan Country
SAN JUAN MOUNTAINS
SAGUACHE MTS DIVIDE OF ATLANTIC & PACIFIC WATERS
SPANISH PEAKS
ATLANTIC AND PACIFIC
TEXAS AND PACIFIC RAIL ROAD
SOUTHERN PACIFIC
RIO GRANDE
DENVER
SIERRA MADRE
SIERRA BLANCA
SOLIDAD MOUNTAINS
SIERRA BLANCO
SACRAMENTO MTS
SIERRA CAPITANA
HIGH HILLS
Plains of San Augustine
SALT BASIN
MIMBRES
Pecos River
Rio Grande
Grand River
White River
Green River
Uintah Valley
UINTAH MOUNTAINS
Uintah River
Colorado River
Rio San Juan
ZUNI
Ft. Wingate
Ft. Stanton
Ft. Sumner
Ft. Cummings
Mesilla
Las Cruces
Mesilla Valley
Ft. Garland
Del Norte
Rio Puerco
Canadian or Red River
Staked Plains

FIRST ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

DENVER AND RIO GRANDE RAILWAY

TO THE

STOCKHOLDERS,

APRIL 1st, 1873.

PHILADELPHIA:
PRINTED BY J. B. LIPPINCOTT & CO.
1873.

CALIFORNIA STATE LIBRARY

DIRECTORS

OF THE

DENVER AND RIO GRANDE RAILWAY COMPANY.

WM. J. PALMER, ROBERT H. LAMBORN,
WILLIAM P. MELLEN, A. C. HUNT,
WILLIAM A. BELL.

PRESIDENT,
WM. J. PALMER.

VICE-PRESIDENT,
ROBERT H. LAMBORN.

SECRETARY AND TREASURER,
WM. S. JACKSON.

MANAGER OF CONSTRUCTION AND GENERAL SUPERINTENDENT,
WM. H. GREENWOOD.

SUPERINTENDENT,
W. W. BORST, Denver.

GENERAL TICKET & FREIGHT AGENT,
D. C. DODGE, Denver.

TRUSTEES OF MORTGAGE,
J. EDGAR THOMSON, Philadelphia,
S. M. FELTON, Philadelphia,
L. H. MEYER, New York.

GENERAL OFFICE: Colorado Springs, Colorado Territory.
EASTERN OFFICE: 125 South Fifth Street, Philadelphia.

Report.

To the Stockholders:

Although the road has been under construction throughout the year, with its business only partially organized, all of its departments new and crude, and a division of sufficient length to indicate what may reasonably be expected of the enterprise only turned over by the contractors to the company January 1, 1873, yet the results of the first year's working, even under these unfavorable circumstances, have fully vindicated the soundness of the views and correctness of the estimates upon which the undertaking was based.

The idea of a north and south railway following the eastern base of the Rocky Mountains from the principal city of the new West—Denver, southward to Mexico—arose from a conviction that this belt of country had especial advantages in its location, climate, and natural resources.

In the first place it was separated from the boundary line of arable culture on the eastward, in Nebraska, Kansas, the Indian Territory, and Texas, by a width of over 400 miles of arid plains, unfit for settlement except in occasional valleys, and only capable as yet of supporting a population of nomadic stock-raisers.

On reaching the foot-hills of this great chain, however, new conditions were found:

1st. Numerous streams of water pouring out upon the plains, and fed by the melting of the mountain snows. The slope being favorable to the distribution of this water over the adjoining land, the result was a fertile agricultural district, capable of raising food for a large population. Although this watered belt was not of great width, yet experience had shown that land cultivated by irrigation will produce much larger crops than the same amount under ordinary culture.

2d. The rugged mountains immediately adjoining on the westward had been found, whenever exploited, to contain veins and deposits of silver, gold, lead, copper, iron, and other metals. An active population of miners had begun to seize upon these treasures, and they required to be fed from the agricultural produce raised near the foothills.

3d. At numerous points along the whole belt named, from Denver to El Paso, on the border of Chihuahua, were found extensive deposits of good coal,—frequently in connection with iron ore, lime, and fire-clay. This circumstance, and the water-power afforded by the rapid fall of the mountain water-courses to the plain, pointed out the country as especially fitted for manufactures.

4th. The adjacent mountains, with their outlying spurs, were covered with a large supply of pine timber for house-building, fencing, etc., also of the best building-stone and lime, while the parks and upper valley were especially adapted to making butter and cheese.

5th. The country on the east of this belt being, as already stated, for 400 miles a grazing district, treeless, too dry for culture, and offering no encouragement to population, the road was protected against competition from the building of a parallel railroad. The mountain country on the west, 400 miles in width, might be considered as impracticable in a north and south direction between its eastern and western base,—in other words, as far west as the Salt Lake Basin, where the Mormons had already begun to develop on its edges the resources of the corresponding rim of good country at the west foot of the range.

6th. The climate, both winter and summer, of the plateau under consideration in Colorado and New Mexico, was ascertained to be remarkably genial,—the elevation above the sea, from 4000 to 7000 feet, being sufficient, in this latitude and at such a remote distance from the ocean, to make it healthful and uniform. Besides this, hot and cold mineral springs of medicinal virtue were found distributed at frequent intervals along the entire mountain base, and the scenery was everywhere picturesque and inviting.

7th. No less than eight lines of railroad, the Northern Pacific, Union Pacific, Burlington and Missouri River, Leavenworth and Denver, Kansas Pacific, Atchison, Topeka and Sante Fé, Atlantic and Pacific, and Texas and Pacific, had either crossed, or have since made more or less progress in the effort to cross, the great plains west of the Missouri River, for the purpose of tapping the resources of this Rocky Mountain region and its adjoining fertile slopes, in connection with the less reliable through trade sought by some of them.

It was a natural and inevitable deduction from all these facts that the country proposed to be traversed by the Denver and Rio Grande Railway was capable of becoming a populous and wealthy section.

It was plain that the long distance from all other agricultural districts would cause its farming lands to be rapidly and densely settled, that its coal, iron, water-power, timber, wool, hides, etc., would soon create, with railroad facilities, a large manufacturing community, assisted by the natural tariff afforded by the distance of nearly 1000 miles intervening between these and the nearest known iron deposits on the eastward, and of 500 to 600 miles between these coal mines and those of Eastern Kansas; that the manufacturing resources, and the working of the mines of gold, silver, lead, and copper, so abundant in the adjoining mountains, would afford a reliable home market to the farmer and grazier; that the larger amount of water near the mountains, and the shelter afforded by the foot-hills, gave peculiar advantages to this section for raising cattle, horses, and sheep; that the climate, scenery, and mineral springs, would attract also a large number of tourists and invalids; that the uninterrupted tide of emigration would have to leap across the great plains, which begin 200 to 250 miles from the line of the Missouri River, and settle upon this first inhabitable belt westward; and that the six or eight great east and west railway lines referred to would, from necessity, promote this rapid colonization of the new West, and, by competing for its trade, stimulate its subsequent growth.

To sum up: All of the conditions of climate, resources, and geographical position being thus highly favorable, any one familiar with the rapid manner in which the old West had filled up could see that this district must have, inevitably, frequent large towns, prosperous agriculturists, dairymen, stock-breeders, wool-growers and farmers, free from serious tax of transportation to distant markets, numerous manufactures of iron, wool, wood, mining and agricultural machinery, cars, wagons, rails, etc., smelting works for the reduction of the precious ores, a large population of miners both for these ores and for the coal and iron, and frequent resorts for those seeking pleasure and health at the different mineral springs and points of scenic interest.

The territory described containing no navigable waters, had been cut off by the great plains, and by wandering tribes of Indians, from previous ready access. The first railroad had but just reached it from the east when the Denver and Rio Grande Railway Company was organized.

Although very sparsely populated, yet our conviction was strong that its exceptional advantages, in possessing that *great variety in the elements of natural wealth which favors the largest and most rapid growth*, would warrant the construction of this railroad through it; in fact, that the railroad itself would settle the country, and the carrying of the emigrants, with all of their household and business plant, their first necessary food, and other supplies, would alone furnish a considerable immediate traffic, while their subsequent trade, the building up of large towns, and the growth of the mines and manufactures, would yield a permanent and lucrative transportation.

RESULTS IN ONE YEAR

AFTER THE COMPLETION OF THE RAILROAD TO COLORADO SPRINGS.

How far these expectations have already been realized may be shown by a few comparisons.

Before the railway replaced the stage-coach from Denver to

Colorado Springs, the latter ran tri-weekly, and carried (as is shown in the prospectus of the company) an average of 5 passengers per trip, or 30, both ways, weekly.

During the year 1872 the railway (while under construction) carried, on the same route, 25,168 passengers, or an average of 484 weekly, being an increase of over 1500 per cent.*

As regards tonnage, a few Mexican and other teams, before the railway was built, carried all that there was.

The actual freight hauled by the railroad in 1872 (an average distance of 61 miles) was 46,212 tons, or, leaving out construction material, it was 34,892 tons of commercial freight.

Again, by the United States census, taken immediately before the commencement of the Denver and Rio Grande Railway, *Denver* had 4800 population. To-day the city directory shows it to have a population of 15,000. *Pueblo*, the present terminus of the main line, had not over 500 people. A count made a few weeks ago shows that it has now, in the old and new town, a population of over 3500, which will in all probability be doubled the coming year.

Colorado Springs did not then exist; now it has about 1500 people, and is continuing to grow at a ratio which will give it 3000 next year. Colorado City had about 300; it has more than doubled, while Littleton, Fountain, and other lesser points on the road which scarcely existed, are growing into important country towns.

The farming population along the line has increased proportionately. Nearly 100 miles south of Pueblo a similar growth is shown, and Trinidad, which had but a few hundred people when the railroad started, has now 1100.

In the mountains adjoining, on the westward, the mines of gold and silver have more than doubled their yield, which is now in Colorado from four and a half to five millions yearly.

---

* The estimate of passenger business that the road would carry the first year, as stated in the company's report, published before work was begun on the road, was 13 passengers both ways daily, or 182 weekly, between Denver and Colorado Springs. The actual result was 25,168 passengers carried an average distance of 67 miles, equivalent to 22,187 carried from Denver to Colorado Springs, or 426 passengers weekly,—over 2⅓ times the estimate.

The Clear Creek and Boulder districts immediately westward of Denver and of Boulder have heretofore had the greatest development; but the rim of the South Park, west of Colorado Springs, has lately attracted great attention, and numerous mines are at work near Fairplay, while two establishments for the reduction of their rich ores have recently been built.

This extensive district promises most favorably both for silver and lead mining.

During the past year the Denver and Rio Grande Railway has had the transportation of most of its ores (which reach the railroad at Colorado Springs) and of a large proportion of the supplies going to the mines. An excellent wagon-road has been built at the expense of El Paso county through the difficult cañon of the Fountain, connecting the railroad at Colorado Springs with the mines of the South Park and the saw-mills and forests of timber on the way. On the head-waters of the Arkansas new mines have also been opened, and the placer mining on the Maxwell estate has produced a large yield during the last year, because of the good supply of water; but the upper Rio Grande Valley and the San Juan country west of the San Luis Park have perhaps opened up the richest prospects. A considerable number of miners have gone in there, and everything indicates a permanent and valuable mining district. West of the extreme southern division of the road (650 miles south of Denver), the Silver City district has grown into an important mining region, with several reduction works.

The excellent coal mines west of Pueblo, near Cañon City, have already been opened and mined by the Central Colorado Improvement Company, at the rate of from 50 to 100 tons per day during the winter: the beginning of an immense future coal trade.

Iron works have not yet been started, but they cannot be long delayed. The Grape Creek Magnetic Iron Ore of the Central Colorado Improvement Company is inexhaustible in quantity, very rich, and free from sulphur and phosphorus.

The soda, iron and sulphur springs at Manitou, near the town of Colorado Springs, have been acquired by the National Land and Improvement Company, who have constructed baths, hotels, made good roads, paths, and many other improvements in the vicinity. They were frequented by several thousand people last summer, a few remaining throughout the winter. During the present season, probably four times as many people will visit this locality. It is already a noted and favorite summer resort, both for pleasure tourists and invalids, and will probably become even more so as a winter watering-place. To the large population of the Mississippi Valley it is one of the most easily accessible, as well as most attractive, mountain resorts. The travel and business which these springs throw over the railway are already large, and are increasing very rapidly as they become better known.

The town of Colorado Springs, 76 miles south of Denver, was laid out and the first house built in August, 1871. The population is now (April 1, 1873) 1500 souls, the number of houses 350, and the number of memberships in the colony 400 Twenty miles of irrigating ditches have been constructed, several hotels built, school-houses, churches, telegraph-offices, newspaper and printing-office, planing-mill, banks, etc., established, thousands of trees planted, parks laid out, and all the elements of an orderly and well established society introduced.

The place continues to grow, and its population will probably reach 2000 during the coming summer.

At South Pueblo, the Central Colorado Improvement Company started a town in November last, which in five months of the winter season contains some 90 houses and a population of over 400.

This place is growing very rapidly, and from its favorable situation ought to become one of the largest, if not actually the largest city on the entire Rocky Mountain plateau. The old town of Pueblo, on the opposite bank of the Arkansas River, has to-day a population six times as large as it had when the construction of the Denver and Rio Grande Railway began at Denver. These two new towns may be cited as examples of the policy of the company in promoting its local trade, and are the first of a series of similar towns and colonies which it is designed to build up as the road is extended.

It will thus be seen that in the first year after opening 76 miles of the railway, a beginning has been made in the development of very many of the varied resources which have been enumerated as constituting the guarantee of wealth to this territory, and that the growth has already been very considerable.

But if so much has been accomplished in the first year, what may we not reasonably expect of the future. There can surely be no doubt that the anticipations which prompted the construction of the railroad, brilliant as they may have seemed, will be in the main fulfilled.

PROGRESS OF THE WORK.

The grading was begun in March, 1871. The track-laying should have been finished to Colorado Springs, 76 miles, in June, but owing to unexpected delays in receiving the iron rails from Europe, it was not completed until October 27, 1871, when the first train ran through. It was not considered as regularly opened for business, however, until January 1, 1872.

The grading was begun on the Second Division January 1, 1872, and the track-laying was completed to Pueblo, 118 miles from Denver, on June 15, 1872.

The Arkansas Branch has since been under construction, and 38 miles were completed and put in operation from Pueblo to the coal mines of Fremont county, by November 1, 1872, and most of the grading was subsequently done to Cañon City, 9 miles farther, before the end of the year.

Great delay and more expense are incurred in thus building short divisions of the road at a time, and it would be cheaper and better to finish the whole line to El Paso, on the Mexican frontier, as it could readily be done in two to three years. It takes practically no longer to get 650 miles of iron rails and joints out from Europe than 76; and this is the measure of the rapidity of building the road. It would be a great saving in cost of construction if the working departments could be organized and kept uniformly employed until the final completion of the line, while the saving of *interest during construction* would amount to at least 5 per cent. on the cost.

BUSINESS FOR THE YEAR 1872.

Although the road, as already stated, has been *under construction the entire year*, and its resources subordinated to the requirements of extending the road-bed and track, and putting them in good working condition, so that its commercial business was not fairly organized, yet the

Earnings from transportation for the year, counting that of construction material at cost, was		$308,138.82
Or deducting construction material		26,738.53
		$281,400.29
And the operating expenses	$201,944.85	
Deducting the cost of transporting material for extending the road	26,738.53	
		175,206.32
Net		$106,193.97
The earnings and expenses of operating the portion opened of the Arkansas Branch for two months are included in the above. After deducting these, the *earnings of the main line*, on an average distance of 100 miles, over which business trains ran during the year, amount to		$274,421.73
And the expenses to		170,354.33
Leaving of net earnings		$104,067.40

which has been placed to the credit of, and has reduced by that amount, the cost of interest during construction.*

The track-laying from Denver to Colorado Springs was completed October 27, 1871, but before the track could be ballasted or surfaced the snows (of an exceptionally severe winter) covered the ground and prevented further work except to repair

---

* *Consolidated Statement of Earnings and Expenses for* 1872.

Earnings.		Expenses.	
Freight	$172,102.23	Conducting Transportation	$63,160.44
Passenger	134,391.56	Motive Power	62,311.73
Miscellaneous	1,645.03	Maintenance of Cars	4,885.95
		Maintenance of Way	55,060.13
		General Expenses	16,526.60

the worst places. The melting of the snows in the spring gave a very soft road-bed, owing to the incompleteness of the track before winter set in, and caused a considerable expense to put it in good condition.

From this cause, from the large percentage of heavy gradient and sharp curvature on the First Division, before the average was reduced by the extension of the line to Pueblo (the ascent being 2000 feet and the descent 1300 feet in the 76 miles between Denver and Colorado Springs), from the newness of the track and of every department of the work, from the experimental character of the rolling stock and the consequent increase of shop expenses, inexperience of the operating force, the high price paid for an inferior coal (until the line reached the Cañon City mines); from the fact that for most of the year the length of the line in operation was not long enough to obtain the best results; also from the fact that the freight for the government having been contracted for early in the season, to be delivered at Pueblo, was, from delay in the arrival of the iron, obliged to be wagoned some distance from the end of the track to Pueblo,—this expense being reckoned among the operating expenses, as were also the repairs of a bridge across the Arkansas River for the government, which in justice they should have done themselves,—and finally because of the smallness of the gross business, the proportion of expenses to earnings thus shown for the year 1872 is very much larger than will be incurred hereafter. Notwithstanding the other unfavorable considerations named, had the carriage of the construction material been reckoned at the same rates as business done for other people, the proportion of expenses to gross earnings for the year would not have exceeded 55 per cent.

Besides passengers, and United States troops, mails, and express matter, the road has carried during the year freight of every description, bulky and concentrated,—wool, hides, furniture, hay, wagons and agricultural implements, groceries, dry goods, iron, nails and hardware, and merchandise of all kinds, grain, flour and feed, lumber and timber, raw and manufactured, cordwood, stone and lime, ores, cattle and sheep, coal, provisions, mining machinery, etc.

Appended will be found a table showing the character and amount of freight shipped from and received at each station, but the following condensation will show at a glance the relative importance of the different classes of trade for that year.

There was carried—

Of lumber, sash, and doors	14,185	tons.
Merchandise and sundries	6,558	"
Wood	5,758	"
Coal (chiefly in two months)	4,065	"
Grain, flour, and feed	3,319	"
Stone and lime	786	"
Wool and hides	399	
Wagons and agricultural implements	294	"
Live stock	189	"
Government stores—miscellaneous	719	"
Bridge timber, cross-ties, telegraph poles, iron rails, and general supplies	11,326	"
Total	47,598	tons,

or an average of 152 tons daily, carried an average distance of 61 miles.

Number of paying passengers carried (about 80 daily carried an average distance of 67 miles), 25,158, exclusive of 292,000 miles of transportation on free passes.*

LUMBER AND WOOD.

The pineries of the Colorado Divide have proved a most valuable feeder to the line. Their produce is shipped both ways over the railroad, and the demand is rapidly increasing for all the requirements of a new country without trees on the plain, and rapidly filling up with towns and farm-houses.

During the year, the completion of the Ute Pass Wagon-Road has opened up a new and extensive supply, which strikes the railroad at Colorado Springs, and is thence shipped chiefly southward to Pueblo.

---

* The free-pass system was abolished on this road January 1, 1873.

In the country adjoining the completed line of the Denver and Rio Grande Railway, on both sides, there are now about twenty saw-mills.

COAL.

The coal mines near Cañon City were not reached by the Arkansas Branch until near the close of the year, consequently the amount carried was limited. During the first two months, November and December, however, there was carried of commercial coal 2717 tons,—the beginning merely of what must rapidly grow to be a very large coal trade. The coal was carried to the following points, and yielded a revenue from its transportation of $12,922,85:

To Denver	1,739	tons.
" Colorado Springs	391	"
" Pueblo	587	"

It will be observed that nearly four-fifths of the whole passed over the main line.

This coal has proved to be of superior quality, hard, clean, almost entirely free from sulphur and slate, bearing exposure and handling without injury, and burning free, with a long, bright flame.

For steam purposes, especially with rapid combustion as in locomotives, it is apparently not excelled by any coal in the United States.

One ton carries a passenger train on the Denver and Rio Grande Railway over 160 miles.

Most of the supply is taken to Denver, a distance by rail of 156 miles, where it sells for $9 per ton, in competition with nearer and less pure coals at $5.

The Colorado Central Railroad, running west from Denver, uses this Cañon City coal exclusively on its Mountain Division, at a cost of from three to four times that of coals on its own road, finding it economy to do so, from the superiority of the article.

Careful examination has shown that there exists between 33 and 40 square miles of this coal land between Pueblo and Cañon City, upon which there are at least two seams about four feet thick each.

In the single vein that has been developed there are by calculation 84,000,000 tons.

It is not easy to overestimate the future demand for this valuable fuel, for working the mines of gold and silver, lead, copper, and iron, for reducing the ores to bullion and matt, for the manufacture of iron of all classes, for woolen-mills and other manufactories, for railway consumption in locomotives and shops of three already existing railways, for gas- and water-works, and blacksmitheries, and for ordinary domestic use in the towns and farm-houses along the mountain base and the growing settlements in the entire length of the great Arkansas Valley, *where there is neither wood nor other coal for over* 500 *miles.*

Up to March 1, 1873, the Central Colorado Improvement Company had mined of this coal 7027 tons.

STONE AND LIME.

Several new quarries of superior stone and lime have been opened along the line during the year, and these articles are found to furnish it a permanent and large business. Stone is carried from Plum Creek, from two localities on the Arkansas, and from Colorado Springs. A very fine building-stone has within a few months been opened on the lands of the National Land and Improvement Company, near Manitou, west of Colorado Springs.

WOOL.

The *wool trade* is in its infancy, but is growing in a geometric ratio.

This is another of the sure resources of the entire length of the line. As it extends southward it will strike the wool districts of Southern Colorado, San Luis Park, and New Mexico, obtaining at once therefrom a considerable tonnage.

ORES FROM AND SUPPLIES FOR THE MINES.

Towards the latter part of the year the road obtained a considerable amount of what is known as the South Park trade from the rich silver mines discovered and opened near Fairplay. This transportation, both in ores and supplies, machinery, etc., promises a large increase during 1873, and yearly thereafter.

It will be observed that, with the exception of the supplies for the government posts in Southern Colorado and New Mexico, yielding a revenue for transportation of $10,222.96, nearly all of the business done by the railway for last year was purely local.

With a trifling exception, no Santa Fé or New Mexican freight was carried over the road.

This was because the line was not sufficiently advanced southward to divert the business from its old and long-established channels, and because of the absence of competition among east and west railroads at Denver.

Farther along this additional traffic will be gained, but meanwhile it is a matter of congratulation that the existing business of the line is so entirely its own, and cannot be diverted. It has, in fact, been for the greater part created by the road itself, and whatever results are shown can be relied upon not only as permanent in character, but as certain to increase yearly with the extraordinary growth and development of the attractive belt of country traversed and to be traversed by the road.

Being central in latitude, and mild and healthful in climate, it is receiving, and must continue for many years to receive, a large emigration from the colder Northwest, as well as of that considerable class whose health breaks down under the malaria of the low alluvial States bordering the Mississippi.

The uninterrupted development of the silver and gold mines continues to create a better and better home market; and the manufacture of iron, from the abundance of excellent quality of the deposits, and the high protective tariff afforded by the remoteness of the nearest eastern iron mines (nearly 1000 miles), must soon begin, and this will start a great variety of other manufactures.

PRESENT CONDITION.

On January 1, 1873, the line of road from Denver to Pueblo, 118 miles, was turned over to and accepted by the railway company.

Many things had been done by the contractors during the year 1872 to improve its condition, after trains had begun to run over different sections. The ballasting was finished, additional side-tracks were laid, other station and engine houses were built, every bridge was strengthened by the addition of two stringers, one on each side; the shops at Denver were very much increased in size and efficiency, and new rolling stock was added.

The road is now in complete order, and, in a country where the natural material for road-bed is so good, can be economically kept so.

The company had on the 1st of January the following rolling stock. (See Appendix for detailed statement.)

12 Locomotives,
7 Passenger cars,
4 Baggage, mail, and express cars,
4 Open excursion cars,
258 Freight cars,
22 Dump cars,
21 Hand and push cars,
2 Snow plows,

besides the trucks ready for 22 freight cars and for 1 passenger car.

In order to be ready for the division south of Pueblo, three additional locomotives and three additional passenger cars have been ordered for delivery the coming summer. The passenger cars will be in time also to accommodate the temporary excess of excursion travel which seeks the road in the summer months.

During the year 1872 the company has built at its own shops near Denver (with the exception of the trucks)—

150 Eight-wheeled freight cars,
2 Baggage and mail cars, and
3 Observation cars,

thus realizing a portion of the benefits which are to be expected from the superior character of its shops.

The high cost of transportation on cars from the far East enables the company hereby to gain a considerable economy, which will be increased constantly as the shop organization is improved. The additional freight cars required as the line is extended will all be constructed at these shops, also the second-class passenger cars, baggage and express cars, etc.

The work turned out by the shops has proved of the best character.

There are 5⅝ miles of side-tracks laid, which include 4900 feet for the Arkansas Branch.

A list of the freight and passenger stations, engine-stables, warehouses, and other buildings, will be found in the Appendix.

Several inexpensive local station houses will be required the coming year, in consequence of the growing business; other wise the line is well supplied.

The company has its lands all provided and paid for (except where the right of way has been gratuitously given), including an ample amount at each station for its present and future purposes, except at Denver, where it will require ground for its principal depot, when the best location for this can be properly selected in harmony with the plans of connecting roads. The company owns eight acres of land in the town intended, but which may not be available for that purpose. It has besides a tract near Denver, on which are its shops; also a fine property at South Pueblo, on which is a good brick passenger and freight depot, at the junction of the main line with the Arkansas Branch. The company now has an equipment sufficient to earn from one-half to three-quarters of a million dollars per annum, and the company is free from floating debt.

Beginning on January 1, 1873, its only liabilities are to earn thereafter the interest upon its bonds, which amounts for the forthcoming year to $196,000 gold, and which it is now fully doing.

INCREASE OF BUSINESS ALREADY.

During the three winter months, January to March, 1873, inclusive, since the railway company began to operate the road, the gross earnings of the main line, 118 miles, have been	$81,145.18
And the expenses	44,289.63
Net earnings	36,855.55
And for the month of March, 1873, the gross earnings on main line (118 miles) were	32,568.98
And the expenses	15,025.80
Net earnings	17,543.18
For March of last year the gross earnings were on 76 miles of railroad	$14,417.12
And the expenses	11,684.95
Net earnings	$2,732.17

So that the gross revenue of the corresponding month this year shows an increase of about 126 per cent., and the net revenue, of about 542 per cent.

The increase of gross earnings *on the same number of miles* operated for March, 1873, over March, 1872 (excluding construction material, of which none was carried this year), is 60 per cent., and of net earnings (to the mile operated) over 300 per cent.

The proportion of expenses to earnings on the main line for the first three months of 1873 have been 54 per cent.

This being a light winter business, it of course considerably exceeds a proper average for the year. In March the proportion was diminished to 46 per cent.

The average for the year 1873 is estimated at 50 per cent.

If the business per mile of the main line* increases for the remaining months of this year over last in the same proportion as shown for the first three months of this year (45½ per cent.), the gross earnings for 1873 will exceed $500,000.

The company's estimate of net earnings from the present length of main line for the year is $250,000.

---

* Leaving out construction material.

During 1873 there will be the following advantages over last year, which will tell materially in reducing the proportion of expenses:

1. The track is ballasted, settled, and in first-class order.
2. Instead of using the inferior Boulder coal, at $5.45 per ton, the company now gets for $3 per ton coal twice as efficient from Cañon City.
3. The shop expenses will be much reduced, because everything was new the first year, and many adaptations necessary for the rolling stock have now been completed.
4. By the increase of business, the through and local passenger and freight trains will have for most of the year a traffic to fully load them.
5. The line being now longer, the trains can be run to greater advantage, many expenses not increasing with this increase of mileage, and the proportion of the cost of obtaining and handling freight to the distance transported being lessened.
6. The business of the line may even be doubled without any increase whatever in some of the expenses, and with very slight increase in most of them.
7. The several departments are better organized, and the men more thoroughly trained.

GROWTH OF BUSINESS.

As already stated, the commercial transportation of the line shows an increase for the first quarter of 1873 over the same quarter last year of 45½ per cent. per mile operated, and the business of March a corresponding increase of 60 per cent.

Even without extension, it is believed that this rate will be more than fully realized throughout the year.

The several colonies along the line are growing constantly. Denver, Pueblo, Colorado Springs, etc., will add largely to their populations. The South Park mines have been developing steadily, and are now in condition to ship a considerable amount of ore and to require a largely increased amount of supplies and machinery. The extension of the Colorado Central Railroad (narrow-gauge) from Golden City, west of Denver, to the Central City mining district, has already opened up a market for a portion of the coal and mill supplies from the line of the Denver and Rio Grande Railway; and this line, which will probably be completed to the silver mines and reduction works of Georgetown during the year, may hereafter be counted upon as a permanent and valuable feeder, with which, although constructed by another company (the Union Pacific), the Denver and Rio Grande Railway will be the only one that can connect without transfer of freight. There is a constantly growing supply of lumber reaching the road at Colorado Springs from the pineries communicating with the Ute Pass, and the newly-commenced business of carrying stone and lime will soon attain respectable proportions.

The supply of wool is increasing very rapidly each year, and the growth of the farming population, with the large additional amount of land which has been and is being put under irrigation along the line and in the Arkansas Valley, will add largely to the transportation of grain, which heretofore, from the fact of the people of Colorado being new-comers or chiefly absorbed in stock-raising, mining, and trading, has been a very limited business.

The coal trade will show a steady increase with the rapid growth of the population along the line and at Denver, and with the acquisition of new markets in the mines and railroads.

CONNECTIONS.

At present the connections of the Denver and Rio Grande Railway are with three lines at Denver,—the Kansas Pacific, the Colorado Central, and the Denver Pacific, and thereby with the Boulder Valley Railway.

The Denver Pacific forms another outlet to the East by way of the Union Pacific Railroad, which it joins at Cheyenne; but, being under the control of the Kansas Pacific Railway, there has been no competition for east and west trade at Denver. The consequence is that the Denver and Rio Grande Railway

Company has not been able to carry any of the freight to and from New Mexico, except the comparatively small amount for the government. This business, which would have yielded our road a revenue of over $100,000 between Denver and Pueblo for the last year, has left the line of the Kansas Pacific Railway at Kit Carson, east of Denver.

The Union Pacific Railroad Company, however (having lately completed the narrow-gauge Colorado Central Railroad to the Clear Creek gold and silver mines), are now building a cut-off, which will connect this line at Denver with the main line at Julesburgh.

About 40 miles of this cross-line has the track laid, and over half the remainder is graded, and the whole is expected to be in operation before the end of this year. The result will be a healthy competition between the two long east and west lines, extending through their various and separate interests to the Atlantic seaboard, for Colorado and New Mexican trade, and the diversion of a large share to the Denver and Rio Grande Railway.

The company has taken care to preserve a state of entire impartiality towards all its connections, a policy which will continue to be closely adhered to.

On the south, at Pueblo, two eastern connections are proposed, although neither line is as yet nearer than about 150 miles. The Atchison, Topeka and Santa Fé Company have reached the western boundary of Kansas, and propose to extend their line up the Arkansas Valley to Pueblo, if possible during the present year.

When this is done they will form a third connection from Denver to the Mississippi Valley and the East, which will throw an entirely new trade over the whole length of the Denver and Rio Grande Railway.

The Kansas Pacific Railway Company also proposes a line from Kit Carson by way of Fort Lyon and the Arkansas Valley to Pueblo.

Both, if constructed, will be greatly interested in colonizing and developing the farming resources of this fertile valley, and thus create additional markets for the coal, lumber, and other supplies from the vicinity of the mountains, which must pass over the Denver and Rio Grande Railway.

All three of the great East and West trunk roads mentioned will likewise of necessity contribute with energy to the colonization of the productive mountain base of Colorado, the development of mines, the carrying of tourists, etc.; and under such stimulus the country must grow in wealth and population with even more than usual western rapidity, to the corresponding benefit of our North and South line.

Besides these roads, two others, having Colorado as an objective point, have advanced a greater or less distance from the Missouri River across the plains.

The Burlington and Missouri River Railroad has reached Kearney Junction, 191 miles west of the Missouri River at Plattsmouth, and is looking for a route in the direction of Denver by way of the Upper Republican Valley, and the Leavenworth and Denver (narrow-gauge) Railway has eighty miles completed and in operation west from Leavenworth.

Other narrow-gauge organizations have been formed, eastward from Leavenworth to St. Louis, thence to Terre Haute, to Cincinnati, to Pittsburg, and the Atlantic, as well as southward from St. Louis to Cairo, New Orleans, and the southeast, and from Leavenworth northwestward to Iowa and Chicago, and there is no doubt but that a complete system of narrow-gauge railroads will connect the Denver and Rio Grande Railway with every important section of the East and West within a few years.

THE ARKANSAS VALLEY BRANCH.

The construction of the line from Pueblo to Cañon City under a separate mortgage from that on the main line was begun in July last, but, owing to heavier work being encountered than was anticipated, it was not completed to the coal mines of Fremont county in time to obtain any appreciable benefits from the coal and other business over it before the close of the year.

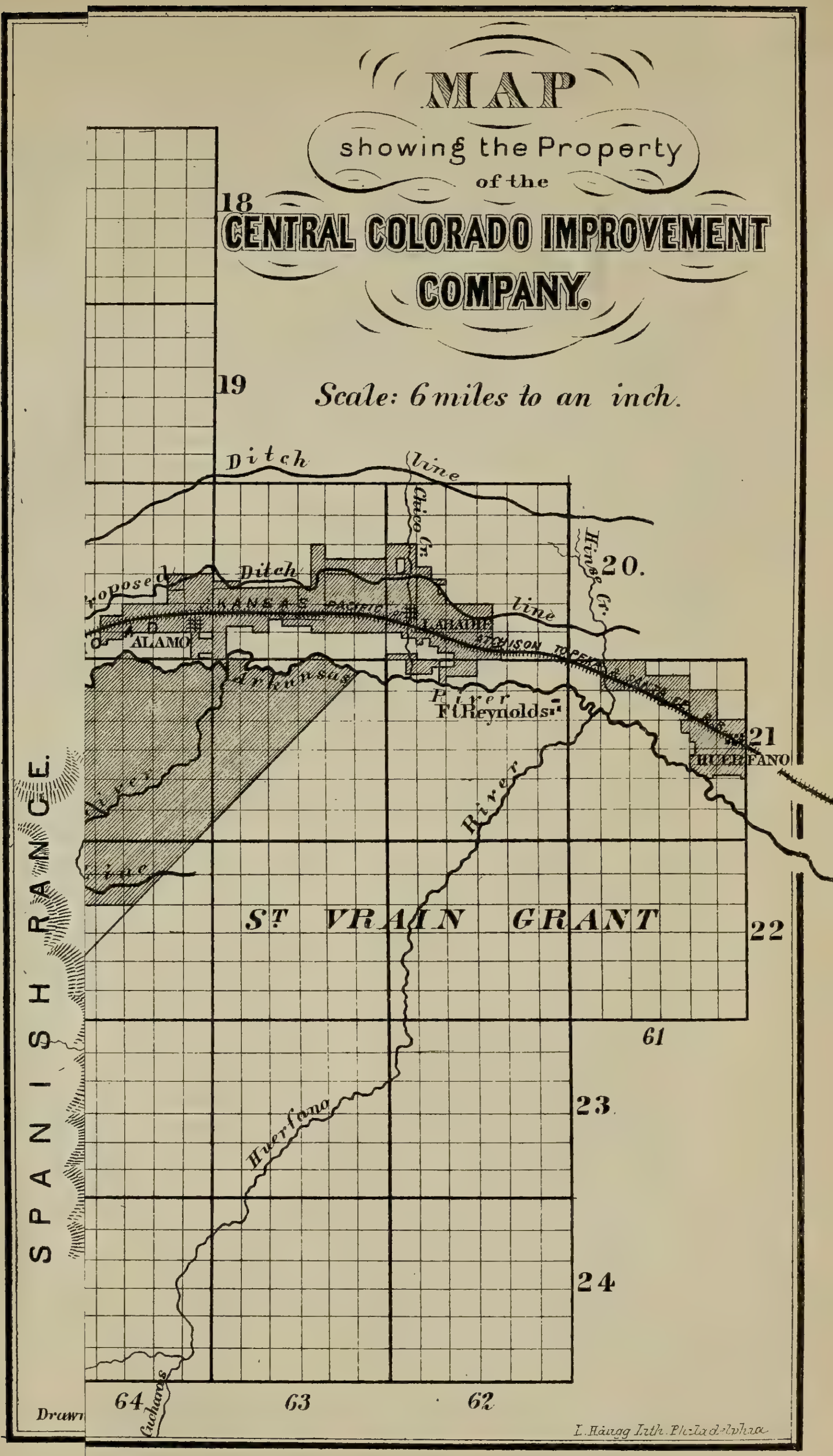
The track actually reached the coal mines, 38 miles west from Pueblo, on the 20th October, 1872; but much work remained to be done to render the road-bed safe from spring floods in the Arkansas River, and the line still remains in the hands of the contractors. During the two months of November and December, however, they carried over to market, outside of coal for the use of the railroad itself, 2717 tons. The gross earnings of this part of the branch during the said two months (construction going on) are reported at $6,978.56.

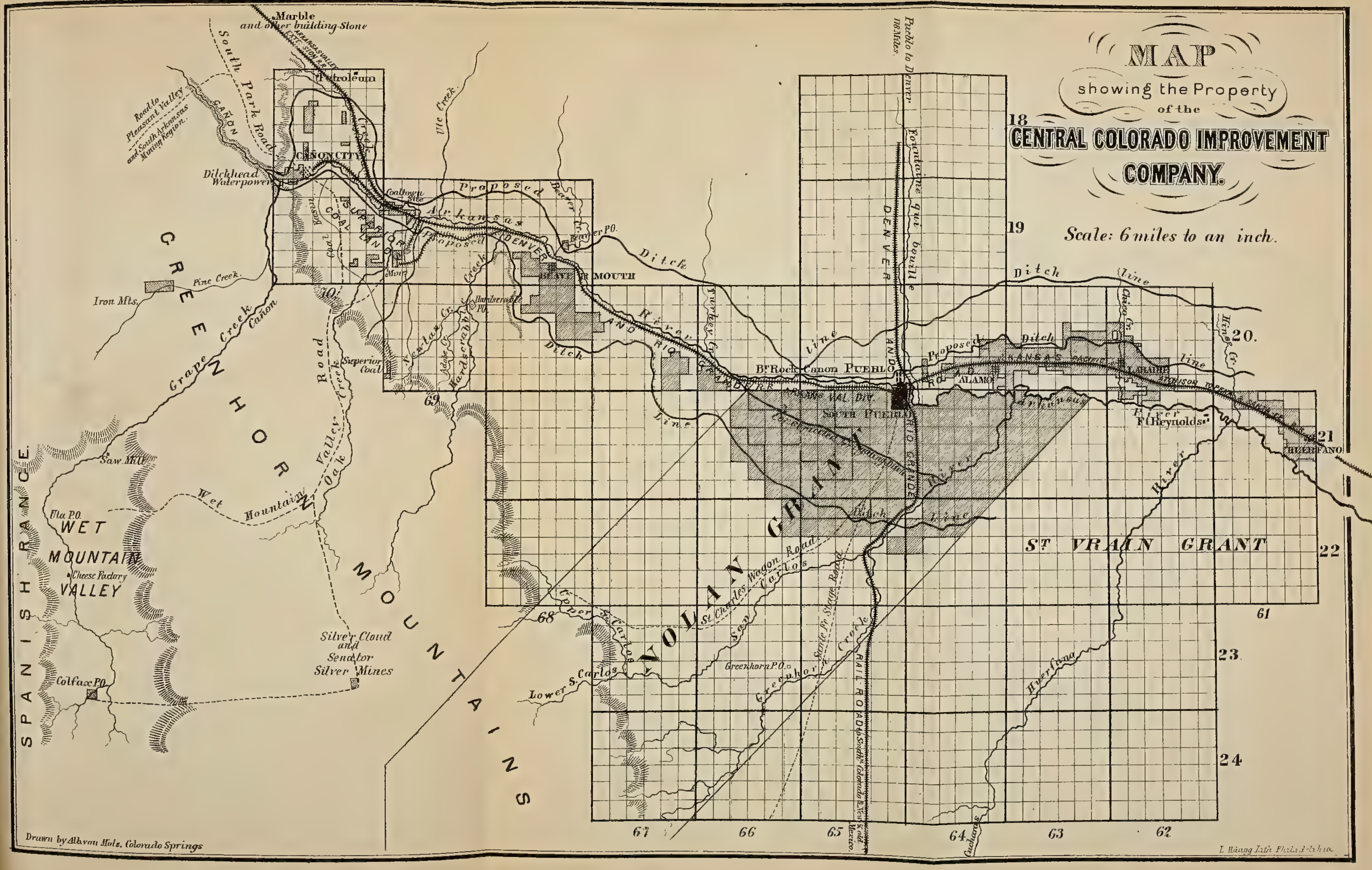
The road-bed is also graded for most of the way to Cañon City (9 miles west of the coal-mine junction), and when the track is extended thereto, the growth of the town and adjacent country, the passenger business to the Hot and Cold Mineral Springs at the mouth of the cañon of the Arkansas River, and the excellent quarries of building-stone, also the growth of the Wet Mountain Park, of the Upper Arkansas Valley, of the south-east rim of the South Park, etc., in connection with the increasing coal trade, should enable this branch before long to pay of itself, apart from the large business it throws on the main line.

But to realize the best results, the large deposits of rich iron ore belonging to the Central Colorado Improvement Company in this district should be mined, and iron manufactures established in connection with the coal. As soon as capital can be induced to seek this quarter, a wonderfully rich field, now idle, will be occupied, which in innumerable ways will stimulate the growth of the country and the business of transportation.

The remoteness already referred to of Colorado from any iron mines on the eastward, the demand for iron for all the purposes of the 500 miles of railroad already existing in this territory, and the branches and extensions constantly building, the large requirements at home of iron for the gold and silver mines, for manufacturing, mining and agricultural machinery and implements, besides all household purposes, produce so favorable a combination of circumstances as to invite strongly the immediate introduction in this vicinity of the iron manufacture in all its branches.

The town of South Pueblo, started by the Central Colorado Improvement Company, on the south side of the Arkansas


MAP
showing the Property
of the
CENTRAL COLORADO IMPROVEMENT
COMPANY.
Scale: 6 miles to an inch.
18
19
20.
21
22
23.
24
61
62
63
64
Ditch line
Proposed Ditch line
Chico Cr.
Hinse Cr.
KANSAS PACIFIC
ATCHISON TOPEKA & SANTA FE R.R.
ALAMO
LAHADIE
HUERFANO
Arkansas River
Ft Reynolds
River
Huerfano River
Line
ST VRAIN GRANT
SPANISH RANGE.
Cucharas
Drawn
L. Haugg Lith. Philadelphia



MAP
showing the Property
of the
CENTRAL COLORADO IMPROVEMENT COMPANY.

Scale: 6 miles to an inch.

Drawn by Alb. von Holz, Colorado Springs

I. Haugg Lith. Philadelphia

River at the intersection of this branch, with the north and south or main line, has, in a few months after being laid out, attained a population of 500, and promises to have a population of 1000 by summer, and to grow steadily and rapidly until it becomes one of the most important towns of the entire eastern belt of the Rocky Mountain plateau. Favored in climate, central latitude, moderate elevation above the sea, advantageous location with reference to the coal, lumber, iron in the mountains or mountain spurs west, south, and north of it, to its being the natural depot of a fine agricultural valley, as well as of unlimited grazing plains that surround it, there seems nothing wanting but railroad intersection, and this is already partially supplied by the two lines of the Denver and Rio Grande Railway Company, and will be still more so by the extension to Pueblo from the east of other railroads.

The Central Colorado Improvement Company has constructed here an irrigating canal of 20 miles in length, has made roads and bridges, graded streets, set out thousands of trees, and prepared the foundation for an attractive and busy town.

They have already begun to realize the reward in the rapid sale of town lots at good prices.

There are several other colony locations on the Arkansas Branch Railroad, belonging to the same company, which will be opened to settlement in due time, and where the history of their predecessors at South Pueblo, Colorado Springs, etc., may naturally be expected to be repeated.

The Petroleum Springs, near Cañon City, referred to in the first report of the Directors, and which for years have produced oil for local purposes, have within a short time been taken hold of by a company who have erected machinery, and propose boring some 800 feet to demonstrate whether or not a larger supply exists below.

The bonds of the Arkansas Branch (under a separate mortgage from those of the main line) are purchased by the Central Colorado Improvement Company, whose lands and mines are to be developed by the construction of that branch.

EXTENSION OF THE MAIN LINE.

As soon and as rapidly as the means can be obtained on favorable terms, the main line should be extended southward. The road would, we believe, pay a good interest to-day, were it completed to El Paso, its legal terminus on the southern boundary of New Mexico. The country does not grow to any material extent far beyond the temporarily-existing terminus, and the actual construction of the railroad through it seems indispensable to its development. As the railroad advances it will build up trade everywhere along its line, as it already has done to such a marked degree on the present Division. There is, therefore, no object in waiting; on the contrary, there is a positive loss. New Mexico has 110,000 people, probably double the population that Colorado had at the time the construction of this road began.

The trade of these people and of Santa Fé, the commercial depot of New Mexico, is not now obtained by the Denver and Rio Grande Railway, because the line is not sufficiently advanced southward to tap it.* This trade is considerable in tonnage, and of a very remunerative character, and by passing over the entire length of the Denver and Rio Grande Railway would, exclusive of the new local development, nearly, if not quite, double the *net earnings* of the existing Division.

At present it may all be obtained by the simple extension of the line to Trinidad, a common point on the New Mexican highway, about ninety miles south of Pueblo. This section should be built, if possible, during the present year. But the bulk of this trade can only be secured for any length of time by the completion of the line to a point opposite Santa Fé, in the Rio Grande Valley, to which it is important the road should be rapidly pushed.

Neither should it rest there, but go on as fast as possible down this productive valley to El Paso. The line should be extended not only to obtain this prize, but also to start and expedite the development of the resources and growth of population in this new country.

---

* The company now obtains of the New Mexican passenger-travel about three-fourths.

Let us enumerate what there is ahead:

1. Proceeding south from Pueblo, we cross the upper valleys of the St. Charles, the Greenhorn, the Huerfano, the Santa Clara, and the Cucharas, and at Trinidad strike the larger and pretty well populated valley of the Purgatory. These are probably all capable of the same development which the railroad has induced between Denver and Pueblo.

Between these irrigable valleys, and everywhere along the slopes of the Greenhorn range, are plains of grazing land, already containing many thousand head of cattle and sheep.

The town of Trinidad has a population of 1100, probably twice as many as Pueblo had when the railroad started from Denver.

The construction of the road to Trinidad would more than double its population in a year.

2. At Cucharas (about half way) coal has been found, and on the slopes of the Raton Mountains, near Trinidad, occurs a large field of excellent coal, with several veins nine to ten feet thick, so situated as to be advantageously and cheaply mined. Recent experiments at the Denver Gas Works have shown that this coal makes an admirable coke, hard, metallic, firm, and well adapted for metallurgic purposes.

Its quality is very good, and what adds to its value is the proximity in the same foot-hills of large beds of rich and pure kidney iron ore, sometimes in masses large enough to be worked by tunnel.

Some seams of natural coke are found in the same vicinity. The extent of this coal field is so great, and the seams so numerous, that the coal may be considered as practically inexhaustible.

As no coal has yet been found in the San Luis Park, or Rio Grande Valley, north of a point opposite Santa Fé, this coal thus acquires an additional value for the supply of those districts.

3. In crossing the Spanish range to San Luis Park, as well as on the slopes of the Greenhorn Mountains, and on the headwaters of the Huerfano and Cucharas, and west of Trinidad,

are extensive *pineries*, which will furnish a large lumber transportation both southward and northward.

4. West of Fort Garland, on the waters of the upper Rio Grande, and south therefrom in the so-called "San Juan Country," is a large district, which, from its material wealth and other advantages, has attracted much attention during the past year, and a considerable number of miners have gone in there. Being a country of numerous water-courses, abundant timber, fertile valleys, rich grass parks, coal, hot mineral springs, and gold and silver, its development promises as much for this railway company as that of perhaps any district accessible along its entire route.

5. The San Luis Park produces a large amount of wool, which is increasing largely each year. All would pass over the railroad. It also contains already a farming population on the Saguache, the Conejos, the Culebre and Costilla Creeks, and this can be enlarged indefinitely on the west side of the park, by throwing the water of the Rio Grande, taken out where it emerges from its mountain gorge, over a large, smoothly-sloping plain of good land, lying north and south of that river, amounting to over a million of acres.

Here is room for a dozen large colonies.

There are twenty-five hot mineral springs in one locality in the San Luis Park. Its dairy resources are very great, and already butter is made there and carried to Santa Fé.

In a north and south direction the park is nearly level for 100 miles. The mountain ranges on each side of it, although but poorly prospected as yet, have disclosed many gold and silver veins and some placer deposits, which will undoubtedly be worked when this country becomes more accessible to labor supplies and capital. The placer gold of Maxwell's, and the quartz and placer deposits near the head of the Rio Grande, are already worked.

6. The Costilla estate will be developed by this part of the line, and the rich Moreno gold mines of the Maxwell estate will lie about forty miles distant to the eastward.

7. Southward from the Costilla is the well-known Taos Valley, also the timber and good grazing country along the

eastern foot-hills of the Sierra Madre, the numerous hot and other mineral springs of the Ojo Caliente and its upper branches (some of which are already frequented by invalids), the Chama Valley, and the "San Juan Country" west of it; then comes Sante Fè, with 8000 people and a large existing trade; then the lower valley of the Rio Grande, under cultivation more or less to El Paso.

8. Within a few miles of the Rio Grande, southwest from Sante Fé, along the base of the Zandia Mountain, are several veins of good coal (including two beds, four feet thick each) of first-rate anthracite, already worked and used for the adjoining gold mines, known as the "Old" and "New Placers."

There are other veins of coal along the Rio Grande south of Albuquerque, and finally, near Fort Craig (about 200 miles southward from Sante Fé), a superior bed, 8 feet thick, of pure coal is found, which will be of great value to the mines of southern New Mexico, and probably also of Chihuahua and other northern States of Old Mexico. Some coal has also been found near El Paso, in the Mesilla Valley.

9. Besides the coal, there are several veins of magnetic iron ore in the Placer Mountains south of Sante Fé; and the mountain ranges which on either side inclose the Rio Grande Valley contain veins of gold, silver, lead, and copper, at frequent intervals from the San Luis Park to the border of the Chihuahua.

Many of these were formerly worked by the Spaniards, traces of their improvements being still visible; but when driven out by the Mexicans or Pueblos, at the time the latter achieved their independence, these mines were closed; but they are undoubtedly still rich, and will be reopened when new blood goes in, tempted by the advantages of railway communication. The silver mines of Ralston, in southwestern New Mexico, are already developed to some extent, and have several reduction works and a considerable population.

The auriferous copper of Santa Rita and Pinos Altos is well known. There is also abundant pine timber on the Zandia Mountain, opposite Albuquerque, which will be carried long distances down the Rio Grande Valley, because none of any consequence is found between Albuquerque and El Paso. The waters of the Rio Grande, north of Albuquerque, afford in many places admirable locations for water-power, which will be utilized for the reduction of ores, the manufacture of wool, of flour, lumber, etc.

10. The lower Rio Grande Valley, for over 300 miles, is a corn and wine country, filled with little towns, villages, and ranches, which contain the bulk of the population of New Mexico. It is a productive valley, and yields large crops of corn and vegetables and grapes of a superior quality in the greatest abundance. The vineyards begin at Bernalillo, twenty miles north of Albuquerque, and extend at intervals to El Paso. The fruit is never troubled with insects or mould, and is quite equal, if not superior, to that of California.

It is well adapted to making wine, and a considerable amount is already made each year for the local demand. Besides grapes, there are also raised peaches, apricots, pears, plums, etc.

Any one familiar with the present fruit demand of Colorado (which is supplied chiefly from California, 1500 miles distant) will have no difficulty in comprehending the fact that in this semi-tropical valley lies the certainty of a large and yearly increasing trade over the whole length of the road. And when a sufficient wine-making population of skilled labor is introduced, the transportation of wine to the North will be among the most remunerative sources of business for the road.

But in consequence of its being the principal valley, and having the most water of any of the streams of southern Colorado and New Mexico, the Rio Grande is not only the *vineyard*, but also the *granary*, of that area.

As Indian corn flourishes, hogs can be raised in abundance, and will be carried in large quantities to the North, where at present they, or their products, are nearly all imported from the States lying east of the "great plains." On each side of this arable valley are inexhaustible pastures for cattle and sheep.

The Mesilla Valley, immediately north of El Paso, is probably the most fertile portion of the entire route. El Paso, the legal terminus under the United States charter of the company, has a population on both sides of the Rio Grande of 15,000 souls.

The Armendaris estate, containing over 800,000 acres, lying in the Rio Grande Valley and east of it, between Santa Fé and El Paso, has lately been purchased with the view of placing a large Alsatian colony upon it.

11. The possibilities of great and rapid development of the local resources in a country such as we have hastily described from Pueblo to El Paso, are unquestionable, but the new markets afforded by the intersection of the several east and west lines now in course of construction,—the Texas and Pacific, which will cross the Denver and Rio Grande at or near El Paso, the Atlantic and Pacific, which will cross it south of Santa Fé (near Albuquerque or San Felipe), and the Atchison, Topeka and Sante Fé, which will intersect it probably at Pueblo,—must very greatly stimulate this growth.

The miners, smelters, and graziers of western New Mexico and Arizona will be consumers of the breadstuffs, fruits, wine, lumber, coal, iron, blankets, etc., from the line of the Denver and Rio Grande Railway, which will receive from these intersecting lines, for transportation a greater or less distance, many colonists, groceries, and foreign goods from New Orleans and elsewhere in the Mississippi Valley, cotton from Texas, etc., bound for Denver, Pueblo, Trinidad, and its whole line.

The above will give a general idea of the character and extent of the business awaiting the line as it is extended southward from Pueblo, but the *net earnings* of the company will be more than proportionally benefited.

1. Because the cars can be run over the longer distance to greater advantage; requiring less expense for procuring, loading, and otherwise handling freight in proportion to the mileage run, and in the case of passengers, less train-labor per mile.

2. Because, while a similar local trade will rapidly build up on each new division, the through transportation thereby thrown over the existing line is almost clear gain to it.

3. Because, as the general expenses, many of the shop expenses, superintendence in the various departments, etc., are nearly the same whether a larger or smaller volume of business is done, the percentage of all expenses due to any increase of trade resulting as well from additional length operated as from enlarged business on existing line is very small. In the latter

case, especially, situated as our line is now, with less to carry as a general thing than would load its respective trains to their capacity, it would be quite insignificant. For instance, two more car loads of passengers daily each way, added to each train last year, would have added over $300,000 to the revenue; but the expense of carrying them, as the two cars themselves weigh but twelve tons, would have been very slight. The additional coal required (if from the Cañon City mines) would not have cost $1000.

MEXICO.

It has been a part of the plan of this company, from the inception, to extend its line southward from El Paso along the Rocky Mountain plateau to the city of Mexico and the tropical plantations of the adjacent coasts.

The heart of that republic with its *nine millions of people* was as naturally and surely our objective point, as the Pacific slope of the United States with its 700,000 population was the proper objective of the Pacific Railroad when it started across the plains from the banks of the Missouri River.

En route, the development of the rich mines of Chihuahua, Durango, Zacatecas, Guanajuato, Queretaro, Michoacan, and the State of Mexico, of the extensive wine and cotton district of northern Mexico, of the tin and iron deposits of Durango, of the pineries of the Sierra Madre, of the great wheat field of Central Mexico, as large as that of California, is sure to furnish a large local trade of itself sufficient to warrant the extension of the road.

But when the connection is made, an enormous *through* traffic will spring up between the heart of Mexico, with its harbors on two oceans, and the Rocky Mountain country of the United States,—Colorado, Kansas, Nebraska, New Mexico, Wyoming, Montana, Utah, California; indeed, the greater part of that vast and rapidly growing region lying between the Missouri River and the Pacific Ocean, to which this trunk north and south line, and the several Pacific railroads crossing it, will render it accessible. The Mexican tropics are the only tropics reachable by railroads from the United States. To reach all others, the sea must be crossed.

Our New West will get its sugar, coffee, tobacco, rice, rum, molasses, indigo, olive oils, drugs, nuts, and spices, gums, tropical fruits of all kinds, cotton, cocoa, coquito for oil, cochineal, india-rubber, mahogany and a great variety of other hard and precious woods, ropes, tarpaulins, matting and paper (made of the maguey fibre), oysters and fish, dye-woods, soap, leather and saddles, salt and saltpetre, the ornamental Mexican earthenware and statuettes, seeds of all kinds to exchange for northern varieties, cheap horses and mules, and bullion, from Mexico; and, in return, will send back a thousand articles of domestic and agricultural use now unknown to the Mexicans,—iron plows, shovels, cooking-stoves, grates, ranges; also mining machinery and implements of all kinds, sugar, cotton, and woolen-mills and brick machines, wagons and carriages, general hardware, and all sorts of tools, bar-iron and steel, wire, guns and pistols, pipe, furniture, butter, hams, cheese, lard, grapes, apples, bush and other temperate fruits, not to be had here, wines and brandies from the Rio Grande Valley of New Mexico, ice, choice stallions and bulls, etc., to improve their degenerate breeds, cotton and woolen goods, and innumerable other necessities and luxuries from which the people of Mexico have been almost entirely cut off, in consequence of their topographical isolation. The manufactured part of this list, and articles of skill generally, will at first come by this route from Chicago and St. Louis, but in a few years from the works at Cañon City, Denver, Pueblo, and Albuquerque, in Colorado and New Mexico.

In course of time, as the artisans of Mexico become skilled, as capital there takes a manufacturing turn, as coal mines are opened, and iron works and a more complex kind of manufactures are established, many things will be made there which, for the first few years, must be imported; but, by that time, the very growth which this would indicate will render necessary an interchange manifoldly larger.

Denver and Pueblo are nearer to ocean ports in Mexico than to New York, New Orleans, or San Francisco, and could obtain many imported foreign goods cheaper by this route.

These are also the nearest seaports by which to ship the rich silver ores of Colorado and New Mexico to Wales for reduction, should they continue to go there.

Being a narrow-gauge railway, built and operated by cheap labor (averaging in Mexico, now, less than one-fifth of what it is in the United States), without duty on its iron or other material or equipment,—the same being true of all material for its operation, for twenty years,—exempted for the same time by its charter from all local and national taxation, and having so large a local traffic as to be independent of the "through business" for support, this trunk line would be able to carry tonnage over even very long distances, at comparatively low rates; much lower than the broad-gauge east and west lines which connect the Rocky Mountains with the Pacific and the Atlantic harbors of the United States.

For the same reason, even for the West Indian products required by the whole Rocky Mountain region, this route, by the Gulf ports, through Mexico and northward, would be as short and as cheap as any; while there appears to be no reason why, in due time, a portion of the Asiatic trade, now growing to be so large, to California, and paying such remunerative tribute to the Central Pacific Railroad,—the teas, silks, Japanese goods, etc.,—should not come to Manzanillo and other ports of Mexico on the Pacific side, and seek their way to the United States,—especially to the West,—by this railway line. The Mexican government allows the railway to carry goods in bond through their country.

Mexico is a large producer of silver bullion, from mines which are chiefly in the interior, and situated along the railway lines herein sketched. This bullion pays handsomely for transportation, and much of it would go northward from the mining centres through the United States.

Besides colonization going into Mexico from the United States, which will undoubtedly be large as soon as emigrants can get there by rail, there will be a large travel drawn from the United States by curiosity and pleasure, over this healthy route, occupying for its whole distance one of the most salubrious districts of the American continent. Much of the travel of this sort now coming to Colorado would be deflected southward to Central Mexico, the distance being no greater than to California, which now receives such a large yearly influx of visitors.

There is another source of through travel which may reasonably be expected to be large for a few years, until prices of labor have more nearly assimilated in the two countries. There are several millions of laboring people in Mexico, whose average wages do not certainly exceed forty cents per day. In Colorado, farming labor to-day is $1.50, and mining labor is $3 to $3.50 per day, while the most ordinary day laborers obtain $2.50 per day. The extent to which the development of our mines and manufactures and arable farming in Colorado, New Mexico, Montana, etc., is thus kept back, is very great. New mines not rich enough to enable such high prices to be paid would be opened in every direction, and iron works, woolen-mills, etc., start up like magic, were the price of labor reduced only one-half.

It has been generally proposed to remedy this difficulty by importing Chinese; but here is a China at our very doors, from which there would most certainly be brought up by rail a large class of mild, hard-working and efficient laborers, to whom strikes are unknown, accustomed to mining, irrigating, ditching, farming, and gardening; besides domestic servants, a great and constant want in our West.

The travel thus created would be very large. It could be carried very cheaply in third-class cars, but the aggregate net results would be extremely satisfactory.

It has been contemplated from the beginning that this extension through Mexico would be sooner or later built, but during the past year an effort has been made to put the plan in working shape, by taking hold of a concession granted by the Republic of Mexico to General Rosecrans, and the organization of a company (under the control of the managing parties of the Denver and Rio Grande Railway Company), to begin construction of the line northward and westward from the city of Mexico.

The negotiations with the authorities of Mexico, for a modification of this concession, being still in progress, it is only necessary to say here that a sufficient sum has been raised, chiefly in Philadelphia, to build the first Division of the line (150 miles) out of the city of Mexico, and that work will begin the moment the negotiations referred to have been successfully concluded. Should the Mexican government fail to arrange the business to the satisfaction of the company, the work may be deferred, but the final prosecution of the whole plan as above sketched is so manifestly a commercial necessity that it cannot be long delayed.

It is marked out no less by topographical considerations than by those of business.

The whole route was thoroughly surveyed by the company's engineers during last spring and summer, and from their report it appears that a line of easy grades, and cheap cost, with no engineering obstacles, exists all the way from El Paso to the city of Mexico, a distance of 1200 miles.

Although no serious difficulties were anticipated, as Humboldt in the beginning of the century stated "that carriages may be driven from the city of Chihuahua in Mexico, to Santa Fé in New Mexico,"* this important and wonderful adaptation of the country to railway purposes for such a long distance parallel to the base of the greatest known range of mineral mountains, far exceeded our expectations. The line on the plateau, working from both ends, may be built with great rapidity, there being no winter, and no snow, and a large native working population accustomed to ditching, mining, mason-work, etc., existing in the country, at wages less than one-fifth of those now prevailing in Colorado.

---

* "Depuis la ville de Chihuahua on peut aller en voiture jusqu'à Santa Fé du Nouveau Mexique. Le chemin est beau et uni, il longe la rive orientale du Grande Fleuve (Rio Grande), que l'on traverse au Passo del Norte. Les bords du fleuve sout très-pittoresque; ils sont ornés de beaux peupliers et d'autres arbres de la zone tempérée."—*Nouvelle Espagne*, vol. ii. p. 402.

NARROW GAUGE.

The results of operation for the year 1872, as well as in cost of construction, have been entirely satisfactory, and completely vindicate the judgment of the company in deciding upon a gauge of three feet for its system. Not to make this report too long, the remarks upon this question are placed in the Appendix, page 43, to which the reader is respectfully referred.

SURVEYS AND ALTERNATE LINES.

The comprehensive surveys made for the company during the past two years ahead of the line as far as its charter extends, including the examination of seven passes in the Spanish Range, dividing the Arkansas Valley from the San Luis Park and the Rio Grande, have demonstrated the existence of a much more favorable route than was before expected. There will be no tunnel or other serious engineering work on the whole route.

Moreover, it was originally anticipated that the line would of necessity have to go by the Cañon of the Arkansas, and Puntia Pass; but as a result of these careful surveys a better and more direct route has been adopted. The new line traverses a better country for local business, besides saving such a large distance for all the transportation of New Mexico and Southern Colorado.

MORTGAGE BONDS.

The company's mortgage of $14,000,000 was based upon the distance of 875 miles between Denver and El Paso. This was at the average rate of $16,000 per mile for the whole line.

While it was never contemplated that the issue could be limited to this average rate at the beginning of the enterprise, or for the first half of the line, yet the rate will be diminished as the road extends, and there are several considerations which will enable it to be reduced below that average for the last half.

1. The last 400 miles of the line being along the cheap valley of the Rio Grande, will cost very much less than the earlier divisions.

2. The large amount of existing Mexican labor, of wagon transportation and food for the laborers on that part of the line, should still further cheapen the cost.

3. Many expenses for organization, legislation, surveys, right of way, and other general purposes, had to be incurred in the beginning for the whole line of road, or for a considerable distance in advance of the completed division.

4. The main shops are adequate to the car-building and other principal requirements of the whole road, and there are other expenditures which are more or less independent of the length of line constructed.

5. In the beginning of an enterprise like this in the far West, new and untried, it was natural that a much higher rate should be paid for money than will be necessary as it advances.

Continuing to demonstrate its merits by the exhibition of good net earnings and a rapidly growing traffic, its credit will become more and more solidly established every year, and its bonds will gradually appreciate, and before long command a price much nearer their intrinsic value than has yet been obtained.

6. The probable more rapid and uninterrupted construction of the last four or five hundred miles will save a large amount per mile, by the more economic organization which it permits of the working forces, avoiding the long continuance of certain expenses which must be incurred whether a quarter of a mile or three miles of road are built daily; and by the large saving of "interest during construction," incurred before the supplies of iron, etc., can reach the line, and trains begin to run over it for business.

7. The early establishment of iron works along this road, in the Arkansas Valley, which it seems probable would effect a great indirect saving by the loss of time it would prevent, and before long by saving more or less of the heavy cost of transportation from distant markets, which of itself has heretofore amounted to nearly double the original price of the iron rails at their place of manufacture.

In June, 1872, the company obtained the passage of two laws by the United States Congress.

One construed the authority before granted by Congress to all the territories to adopt general laws of incorporation, to include railroads.

And the other directly confirmed to the Denver and Rio Grande Railway Company, for the whole line between Denver and El Paso, all the franchises and privileges that it enjoyed in Colorado under the territorial law, and gave it the free right of way over all public lands, besides a subsidy of all lands required for railroad purposes, not exceeding twenty acres for each five miles; the right to take all timber, stone, water, etc., required for construction, and the same right to condemn private lands which had been given to the Union and Central Pacific Railways.

As the statute of Colorado under which the company was originally organized is an exceedingly liberal one, this act of Congress, in effect, possessed the company of an unusually liberal United States charter. A copy of the two laws will be found in the Appendix (see pages 83 and 84).

No accident by which a passenger was injured has occurred during the year. Three employees had each a hand injured while coupling cars in the yard, and one drunken man (neither passenger nor employee) was killed by the switching engine, at night, near the Denver shops. All the officers of the company have performed their duties with intelligence and fidelity, and to the satisfaction of the board.

By authority of the Board of Directors,

WM. J. PALMER, *President.*

APPENDIX.

NARROW GAUGE.

THE company has saved about 37½ per cent. in the first cost of construction and equipment of its road by reason of the adoption of a gauge of 3 feet instead of 4 feet 8½ inches. This is a clear saving, because the road is equally well built in every respect and its capacity as great as though it had been of the wider gauge.

As for the increase of business from year to year, requiring additional equipment and extensions of the side tracks, there will continue to be a large saving over the other gauge in the outlays necessary to carry this increase of traffic, and as it is not possible to see that a second track will be required any sooner on the road in consequence of its having a narrow gauge, it is believed that the final efficiency of the line is as great as that of any road with the same gradients and alignments.

The trains—passenger and freight—have been run at the same rates of speed which have prevailed on the Pacific lines and on all the other broad-gauge roads west of the Missouri River, and when required on special occasions have run with steadiness at 30 and 40 miles per hour. The passenger cars have proven comfortable and at least as steady in riding as those on the wider roads, and the freight cars have carried satisfactorily all classes of traffic, bulky and concentrated. There has been no accident on the road, and the centre of gravity of the cars is so much lowered that one could hardly occur that would be traceable to the gauge. In addition to first and second class passengers, the road has carried during the past year freight of great variety in character. Besides heavy articles,—coal, ores, stone, lumber, iron, hardware, grain, etc.,—it has carried wool, furniture, hay, wagons, and other freight of the lightest and most bulky nature; while, of course, on this last class, the benefit derived from the gauge by the saving in dead car weight has not been so great, yet *there is no class of freight upon which the proportion of paying to non-paying weight has not been in favor of the narrow gauge as compared with the wide.*

With concentrated or heavy freight, which constitutes on this as on nearly all railroads the great bulk of the tonnage to be transported, the advantage realized has been 35 per cent. That is to say, thirty-five hundreths more freight has been regularly carried on the narrow-gauge rolling stock, with the same total weight of cars and load as on the broad-gauge. This can be most readily seen by observing a train of 16 loaded cars (which weigh say 8½ tons each when empty) arriving at Denver on the broad-gauge roads, and their contents transferred to the Denver and Rio Grande Railway. The *same freight* is placed in 20 narrow-gauge cars, the empty weight of which is somewhat less than 3 tons each. The comparison will then stand as follows:

Cars.	Empty weight.	Paying load.	Total dead weight.	Total paying load.	Total weight cars and load.
16 wide-gauge......	8½ tons each.	10 tons each.	136 tons.	160	296
20 narrow-gauge....	less than 3 tons each.	8 "	60 "	160	220
				Saving in total weight	76 tons.

Which is equivalent, after allowing for the weight of cars necessary to carry it, to 56 tons *additional freight* which the narrow-gauge train could take without any increase of weight over the broad-gauge train. In other words, 35 per cent. more,—this is on the presumption that the cars on each gauge are fully loaded. But it very often happens in the ordinary course of railroad business that cars are very frequently not loaded to their capacity, in which event the narrow-gauge receives a proportionately greater benefit. For instance, if from any station there was a load of but 5½ tons to carry, the narrow-gauge car would weigh no more with this load than the broad-gauge car would, entirely empty.

It is the case with almost any kind of freight that *whatever a car on the Denver and Rio Grande Railway holds of goods up to 5½ tons is so much clear gain to it.* That is, it can carry that much in each car as cheaply as the wide-gauge road can run its cars empty. Now this is true, and constitutes a highly important advantage unless there are some offsetting disadvantages.

Certain inquiries naturally arise:

1. *Are the narrow-gauge cars too light to stand the rough usage for any length of time?*

No; because, as all the other cars on the road are likewise light, they are not subjected to any more momentum or crushing force in proportion to their strength than a wide-gauge car is where all are heavy; and further, it is a well known fact in mechanics, that small structures are much stronger in proportion to their weight than large ones.

2. *Are not the cars too small to carry certain kinds of freight advantageously?*

No; because the last year's business showed that, in average actual working, the narrow-gauge box-car, weighing 4 tons, carries even—

Of wool in sacks, loose	5,000 pounds.*
Of wool in bales, loose	8,000 "*
Of wagons and agricultural machinery	9,000 "
Of furniture, "set up" (carried at double first-class rates, as usual)	4,000 "
Of furniture, "knocked down"	10,000 "

These are the most bulky articles which a railroad has to carry; but even of these the proportion of empty to paying weight is in favor of the narrow gauge.

Whereas, of

Groceries and dry goods (assorted), the average load of a car was	12,500 pounds.
And of iron, nails, hardware, lumber, timber, ties, grain and flour, ores, coal, stone, lime, cordwood, and nearly all other freights, it was	16,000 "

Upon which the advantage of 35 per cent., shown by the above calculation, is fully realized.

The cars might, without risk, be somewhat widened to accommodate the bulkier class of freights; but they could not be retained separately for these articles, and it would be of doubtful advantage to increase the weight and width of all or nearly all the cars for the sake of this small special class of business.

3. *Can cattle and horses be carried?*

Yes; and although the road is not yet constructed sufficiently far south to obtain much cattle business, yet in time this may be looked for as furnishing a large traffic, and the road is preparing for it. The stock cars already built are 6½ feet wide, 28 feet long, weight 8500 pounds, and carry nine head of cattle. The animals stand lengthwise with the car, which is better for them than sidewise, as they can steady themselves more readily.

The comparison with the broad gauge is as follows:

	Empty weight.	No. of cattle.	Dead weight of car to 1 animal.
Wide-gauge cattle-car, 30 feet long, 8 feet wide inside	19,000	14	1357 pounds.
Narrow-gauge cattle-car, 6½ feet wide, 28 feet long	8,500	9	944 "

Saving about 30 per cent.

But for short cattle the cars are wide enough to carry the cattle in the usual way, in which case the narrow-gauge car carries 13 head of cattle, or within one of as many as the broad-gauge.

---

* As far as this road is concerned, it was just as well as though the cars could have carried 10 tons each, since the wool all comes northward in the direction of the least trade. It simply helped *to fill up* some of the returning empty cars.

4. *Is the gauge well adapted to passenger travel?*

The cars are comfortable, well ventilated, handsomely fitted up, and the 25,000 passengers who passed over the road last year certainly rode as steadily, and, as far as could be judged, altogether as satisfactorily as on any wide-gauge road. As far as space is concerned, the whole passenger travel of Europe is carried in compartment cars, practically less roomy and not nearly as well ventilated. The first-class cars seat 3 passengers across the width of the car,—two on one side of the aisle and one on the other,—an arrangement which, by increasing the proportion of passengers who can have seats by themselves and adjoining the window, makes it much easier to fill all the seats.

Even three seats are not occupied on the average in wide-gauge cars. A certain number of passengers are acquainted, and wish to sit side by side; others prefer to be alone. It is difficult by supervision to stow away passengers as one would freight: the traveler taking one seat, and his carpet-bag the other, thus prevents intrusion. The car adopted by this company appears to suit the average conditions of travel better than one of either two seats or four.

The first-class narrow-gauge car is 7 feet 2¾ inches wide inside; 35 feet 4½ inches long, weighs 7½ tons net, and seats 36 passengers,—an average of 417 pounds of car-weight to one passenger. The broad-gauge day-car weighs 19½ tons, and can seat 56 passengers,—an average of 696 pounds of car-weight to one person.

5. *Can sleeping cars be used?*

Yes, with much greater advantage than on the wide gauge, because although people unknown to each other can generally with some effort be made to sit on the same seat, they cannot well be made to sleep in the same bed. The practical result is that the traveler pays for two beds and the railways carry the extra weight and width for two beds to one person. So it happens that while the present Pullman Car weighs from 25 to 30 tons, it carries on the average but 15 customers. The Denver and Rio Grande Company has not yet a length of road sufficient to require night travel, but when it has, sleeping cars will be introduced which will weigh less than 10 tons and accommodate 20 travelers. The couches will not be so wide as to allow the sleeper to roll uneasily with the movement of the train, but instead of paying for two berths he will pay for but one. They will be every whit as comfortable as those on the wider gauge, and still leave ample space for the aisle. When a single person wishes, as frequently happens,—especially in the case of ladies,—to take an entire section, he will pay for two berths only, instead of four, as at present.

6. *How about speed and safety?*

As before stated, the trains, both freight and passenger, run on the Denver and Rio Grande Railway at the same rate of speed as on all the wide-gauge roads west of the Missouri River. It is to be hoped the good sense of the lines will prevent any general increase in their speed, at least to any extent; but trains have been run during the past year on the Denver and Rio Grande Railroad at 30 and even 40 miles per hour, and it is impossible to see why they cannot, if it becomes a necessity, increase their present rates as readily as on the wide gauge. The saving claimed for the larger wheels of the broad-gauge line at high speed has been shown to be only a fraction of one per cent.

As regards safety, the cars are no more likely to upset than on the wide gauge, because the centre of gravity has been greatly lowered. This is confirmed by the year's experience on the road. A car on the wide gauge road might, it is true, be made considerably wider than it commonly is without this danger, but that would require a broader and costlier road, and in the practical transaction of the carrying trade the unit of the gross business, the car-load, has proven to be already too large. It wants to be reduced rather than enlarged.

As regards both these important points, speed and safety, we might rest by quoting the opinion of Mr. Silas Seymour, who, although a decided broad-gauge advocate, says:

"With the track in perfect adjustment and cars of proportionate width and height, I see no reason why an engine of sufficient power will not haul a train with as great speed and safety upon a narrow, as upon a wide gauge."

Colonel Greenwood, chief engineer of the Denver and Rio Grande Railroad, claims that in going around curves, cars of the same weight on the narrow gauge are the safest. He says,—

"Now, in giving this question an impartial investigation, we must confess that while at first sight it looks as though the broader the gauge the better the cars would stick to the track going around curves, the real truth is the opposite. The tension line of draft is parallel to the grade line, the iron and the curved line of the alignment of the train is preserved by the flanges crowding against the rail and pushing the car into the curve; hence, since the wider the gauge the longer the outer rail, over which distance the outer wheel must slip ahead or the inner back, there will be a certain extra cramp, the tendency of which will be to help the inner flange to crawl over the rail and let the car off the track. Therefore, cars of the same weight on the narrow gauge are the safest."

There is one respect in which the narrow-gauge car is undoubtedly safer to travel in than the wide gauge,—that is, in the reduction of the momentum, which is the measure of the difficulty of stopping its headway in case of danger, as well as of the concussion in case of collision or being thrown from the track. To carry 100 passengers on a narrow-gauge road, the weight of the cars alone would be 18 tons, instead of about 36 tons as on the broad gauge, consequently the momentum at the same speed would be but little over one-half.

7. *Is a positive advantage claimed from the reduction of the carrying capacity of a car below what it now is on wide-gauge roads?*

Yes, it so frequently has to go partially loaded in the practical everyday working of the business that it would be better if it were smaller. It is well known how rarely a passenger car is full; although capable of seating 56, the cars probably do not average in the United States over 25 passengers to a car. In the heavy Pullman Car it is but 15. It is the same with freight to some extent. The railroads in the United States carry at least four times as much total weight yearly as of freight load. If the car unit were smaller, much unnecessary hauling would be saved. For local trade especially, which constitutes the bulk of business on almost every American railroad, a great advantage would be gained, saving time, side-track room, besides dead weight. The capacity of the narrow-guage car even exceeds the average actual load of the broad-gauge car. It is better proportioned, therefore, to actual requirements, as these have manifested themselves in railroad experience and daily practice.

8. *Is the power of the locomotive affected?*

The experience had on the Denver and Rio Grande Railway, as that on the much narrower Festiniog Railroad, shows that it is certainly not diminished by the narrowing of the gauge. This power depends upon the amount of weight placed upon the driving wheels of the locomotive, which may be increased as desired,—in other words, as the size of the train requires it.

Practically throughout the United States it has not been found desirable, except on unusual grades where special power is used, to increase the freight train above what a 30-ton locomotive will draw. While the narrow-gauge road with the same weight of rail can of course carry any weight of locomotive that the wide-gauge can, yet, even with a very much lighter rail than that usually adopted on railroads in the United States, a 30-ton engine can be used without difficulty by the narrower road, by increasing the number of driving wheels which carry the 30 tons over the track. In consequence of the reduction in dead-car weight, such an engine will draw, as has been shown, 35 per cent. more freight than it can, taken with the present style of rolling stock, on wide-gauge roads; or, a locomotive weighing 23 tons on the narrow gauge will carry as much as one of 30 tons on the other. It is true, the number of driving wheels could be increased on the wide-gauge engine, enabling lighter iron to be used without diminishing the train below its best practical size; but the heavy passenger and freight cars of the wide roads (each of which weighs more than the heaviest present locomotive on the Denver and Rio Grande Railway), and the fact that thousands of these heavy machines pass over the line, since a railroad will have say 20 times as many cars in motion as of locomotives, will practically prevent this advantage from being realized to any considerable extent.

On the Denver and Rio Grande Railway the present passenger locomotive weighs 12½ tons, and the freight locomotive weighs 17½ tons. They are more powerful than are needed ordinarily for the present size of the daily through freight train and passenger train, and for the local mixed train. On occasions when there is a temporary excess of freight, an extra engine is run. When the daily through freight business increases, so as regularly to exceed the capacity of the present locomotive, heavier ones will be put on up to 30 tons. Practically, as Colonel Greenwood states, on any road (except in the case of special inclines), the loss from broken links, smashed drawbars, injured freight, etc., by switching with a train that a 30-ton locomotive cannot handle, is greater than the expense of running an extra engine; or if the grades are light, so that the number of cars would be too large, an extra train. Freight trains, where there is a large business, are consequently run in fleets, the train unit having reached its practical maximum limit.

It is contended by Mr. Spooner and some other narrow-gauge engineers that the power of a locomotive is actually decreased by the increase of gauge, on the ground that the nearer the opposite driving wheels approach to the condition of a single wheel, the less the loss from rigid wheel base. But at least, since there is sufficient room on the 3-feet gauge for the fire-box and all other parts in the proper proportion to drive a locomotive of any weight for traction that broad-gauge roads find necessary or advisable for any gradients, it may safely be concluded that there is *no loss of power in the engine due to reducing the gauge*. But the same power as above shown will enable the locomotive to draw 35 per cent. more paying load.

9. *Is not the length of the train increased by the necessity of using more cars for the same tonnage on the narrow gauge?*

No; not in the case of the great bulk of articles which a railroad has to carry. For instance, the 16 wide-gauge cars, cited before, carrying 160 tons, are each about 30 feet long, or 480 feet total; while the 20 narrow-gauge cars, carrying the same load, are 24 feet long each, or 480 feet total. There may be an increase in length of train with the special class of light and bulky commodities, but if so, it is more than compensated for by the numerous occasions in which the cars are not fully loaded, when the narrow gauge gets the benefit of a much less length of car to the same load. In a year's business there would probably be no difference noticeable.

Nearly the same conditions exist in the case of passenger trains, as is shown by the following table:

Length of Train Required to Seat 100 Passengers.

KIND OF TRAIN.	Length of Passenger Cars to seat 100 passengers.	Length of Baggage Cars.	Length of Locomotive and Tender.	Total length of Train to seat 100 Passengers
Broad-gauge . .	96.42 feet.	44 feet.	53.33 feet.	193.75 feet.
Narrow-gauge . .	111.11 feet.	40 feet.	35.33 feet.	186.44 feet.
In favor of narrow-gauge per 100 passengers				7.31 feet.

But as a broad-gauge passenger car does not in practice contain probably an average of over 25 passengers, and as the narrow-gauge car can be filled more nearly to its capacity, the advantage is in favor of the narrow gauge.

To sum up, if the trains are not increased in length to do the same business, and there is an advantage of 35 per cent. to the narrow-gauge train by reason of its being able to carry that much more load without increasing the total weight, and locomotives of equal power can be used, and that so used they can haul as much on the narrow as on the broad gauge, and that practically there is no advantage gained in speed by the wide gauge, it would follow that the narrow-gauge railroad is capable of doing even a larger business than the wide-gauge.

This is true, as long as the comparison is made with the existing vicious character of rolling stock on the latter.

Then why not alter the rolling stock on the broad-gauge road? Because there are so many hundred thousand cars that it is impracticable. The principal cost of changing the gauge of a road is the alteration of its rolling stock. The process of reforming the cars could not be gradual, because the new, light, and lower cars would either be knocked to pieces by the other heavier and higher ones, or require to be run in separate trains, which is impracticable.

These roads are at the mercy of the heaviest cars, or the most vicious model that any other and perhaps distant road may have introduced, otherwise they could not be run through. All new cars had to be heavy enough to resist the momentum of these, and thus the evil has gone on increasing.

Why not adopt the reformed cars on a new road adhering to the wide gauge? Because the great advantage claimed for adhering to the gauge is simply the avoidance of transhipment, and this could not be gained practically, because the cars of other companies could not be carried unless in separate trains, which is out of the question, and the new, light cars could not be run off their own line with any advantage.

Abandoning, then, the idea of "no transhipment," why reduce the gauge? Why not build a cheap broad-gauge road, and put on the improved and economical rolling stock, even if it cannot be sent off to other roads? Because, while there would be no advantage in it from avoiding transhipment, there is a positive disadvantage in other respects.

As the *reformed* car could on a straight line travel upon a *narrower* track, it was useless to go to the expense of building a wider one for it to run upon; but on curves, a decided advantage is gained by the narrower gauge: the reduced length of wheel base in proportion to width rendering the working of curves practicable, which would be utterly impossible on the wide gauge. Thus the cost of construction is still further cheapened.

Again, the axles and frames being shorter and lighter, the cars are still further reduced in weight from that of the same improved car on a wider gauge. This would permit the same weight of goods to be hauled by lighter engines; lighter rails could be used to carry the lighter rolling stock. In a word, as long as the transhipment was inevitable in either case, it was wise to avail ourselves of all the economies practicable without impairing the proper proportion of the cars.

As there has been considerable difficulty of apprehension upon this point, as to what economy in cost of construction is really effected by the narrow gauge in comparison with a broad-gauge road carrying the same improved rolling stock (except on longer axles and frames), it is well to say that this saving is made up of earth-work, ties, bridges, culverts, ballast, iron rails, and cost of cars and engines. It is true, that under the hypothetical equal circumstances herein assumed the saving in *earth-work* in a plain country, with the same location of route, is not very great; but even here it would be represented by an increase in formation width of at least 20 per cent., under equal conditions. But in a hilly country this benefit is increased by permitting, advantageously, a different location of the road; and in a mountainous country, the difference is so great as under many circumstances to be one not so much of degree as of character. But the language of Mr. Fairlie is so much to the point that the case cannot be more clearly stated than in his words:

"The true narrow-gauge practice permits a closer adaptation of grade to the natural surface than is attained (I speak of a railway practice as the 'half century's' experience has made it) on the broad gauge; hence, lower banks and shallower cuttings, least felt on horizontal, and most on side-lying ground. It involves a great reduction of formation width, because the running weights are less and require less supporting area. By the facility it possesses of employing sharper curves in difficult country, heavy works are reduced in cost, and tunnels are for the most part avoided, or, where they are absolutely necessary, the labor in making them is less," and the saving in bridges and culverts follows from the same considerations, partially from cutting out just so much width of the roadway, and partially from the closer adaptation of the line to the natural surface, with the consequent reduction of the height of embankments and of bridges, the weight of the roadway, etc.

The saving in ties and ballast must be apparent to everybody. The saving in cost of rolling stock and of iron rails to bear its weight, due to the still *further lightening* of the cars, may not be very great, but it all helps to swell the economy. And much of the cost of building any railroad is made up of many small items.

Inasmuch as in no case is there any advantage to the wider gauge, and some gain to the narrow, even on the smoothest plains, the true policy evidently is to adopt the latter, rather than to use the former with improved rolling stock which cannot any better avail of interchange with other wide-gauge roads.

Many admit that the narrow gauge is the best for branches, but dispute the propriety of its adoption for a trunk line; but it is extremely important that the trunk line should have the same gauge as the branches, to avoid innumerable transfers along its route, and that, having proved the equal efficiency of two gauges for both passengers and freight, the one adopted for the main line should be that which will most encourage the construction of branches. Thus the benefits of a railway may be rapidly, because cheaply, extended far out into the adjacent country, greatly to the enhancement of the traffic of the main line. Where a long line follows, as in the case of the Denver and Rio Grande Railway, for the most part a comparatively plain foot-hill country along the base of a great range of mountains, back in which lies everywhere important natural wealth which can only be reached through tortuous valleys or by following the mountain slopes, the argument for adopting the narrow gauge for the trunk line is vastly enforced; but it holds good, as shown, even in a plain country.

Well, admitting all this to be true, and that a narrower gauge than 4 feet 8½ inches is advisable, why adopt specially that of 3 feet?

The Denver and Rio Grande Railway Company was the pioneer of the new movement in the United States, and, so far as known, constructed the first road of 3 feet gauge in the world. The reasons which induced the company to depart from the then existing standard will be found mainly stated above, but it will be of interest to learn why the actual gauge of 3 feet was adopted.

1st. The line was to traverse, in a north and south direction, the eastern base of the Rocky Mountains. It was to carry passengers of all classes,—including troops,—freight of nearly every description, cattle, army material, etc. Some of these articles were bulky, as has been shown, but the great bulk of the tonnage, as in the case of most railroads, was of a concentrated character.

From the experience already had on the Festiniog Railroad of Wales, it was known that the heaviest class of freights—coal, iron, lumber, ores, stone, etc.—could be advantageously carried on a gauge of 2 feet, and even passengers for short distances. But as the Denver and Rio Grande Railway was to exceed 800 miles in length, to traverse a variety of climates, to have a large passenger business of tourist and health travel, as well as of emigrants and soldiers, and was required to carry many of the lighter and more bulky commodities, and cattle, it was admitted that the gauge should be just as much wider than the gauge of that existing narrow-gauge railroad, whose success, mechanically and financially, was indisputable, as would permit these new conditions to be complied with.

For the government roads in India, a year's careful and thorough examination of the whole question by a board of experienced commissioners had resulted in a majority of the board voting for a gauge of 2 feet 9 inches, and the remainder for 3 feet 6 inches, which the government settled by adopting as a compromise the French metre, about 3 feet 3 inches, for a system of 10,000 miles decided upon for that country. But the roads of India were not to pass through or near a mountain country generally, and a large amount of cotton was to be carried, so that it might be considered advisable to have a larger car-floor surface than under ordinary circumstances in the United States.

Mr. Spooner's experience had suggested 2 feet 9 inches for average conditions in England, while admitting that this might be too narrow for different characters of climates, customs, and prevailing load. Mr. Fairlie recommended 3 feet. Norway and the Canada roads had adopted 3 feet 6 inches.

The Denver and Rio Grande Railway, while traversing the Rocky Mountain plateau at the base of the mountains for most of its length, required to cross one mountain chain, and would inevitably have many branches frequently running up through narrow and tortuous cañons (or valleys) to the gold and silver mines, parks, forests of lumber, coal, etc., in the adjoining mountains.* These side lines would in time be numbered by hundreds between Denver and El Paso, and still more in Mexico. They would of necessity require to be of narrow gauge, as their construction of a broad gauge would involve tunneling, rock cutting, bridging, etc., so expensive as to be impracticable, and it was desirable that the gauge of these should be as narrow as would be consistent with efficiency, for these branches would have passengers to carry, with machinery and mixed freight, as on the main line, although a less proportionate amount of light and bulky goods.

The gauge to be adopted, therefore, must suit this condition, as it was infinitely more important to avoid innumerable points of transhipment where these branches would intersect the main road, than those at the intersection of the few broad-gauge east and west lines. The coal and provisions must be carried direct to the mines and smelting works, the ores to the coal, lumber to the towns, etc.

The hope, which has since been fully realized, of inducing throughout the United States an uniform adoption by all narrow-gauge enterprises of the gauge selected by this company, so that there might be no war of narrow gauges, also entered into the question.

---

* Already, within one year, two such connecting lines of narrow gauge have been built and several others are projected.

It was not thought advisable to abandon the American style of passenger car, and upon this plan a 3-feet gauge would permit 3 passengers to sit comfortably across the width of the car, leaving sufficient space for the passageway. Less than this gauge would compel a reduction to 2 passengers, or the adoption of the English compartment system. A wider gauge would not admit of 4, without making it too wide for economy, and besides it was every-day experience that by reducing the proportion of those passengers who could have seats by the windows, or by themselves, it was made more difficult to fill all the seats. On the average, as we have seen, even three seats are not occupied on wide-gauge roads.

The car adopted by this company appears to suit the average circumstances better than one of either two seats or four, and it gives the proper amount of general space and ventilation.

For sleeping coaches the width is exceedingly well adapted, as has been shown, allowing a comfortable single berth both above and below on each side of the aisle, with ample space for the latter.

As regards *freight*, this gauge of 3 feet, it was believed, would give floor space enough, on a properly-devised car, for the carriage without disadvantage of the most bulky articles, although of course it was not expected to obtain an equal proportionate benefit with this class of commodities as with heavier ones.

For the great bulk of the freight on this, as on all roads, the floor space will be ample. As shown by Colonel Greenwood in his letter (page 63), out of 300 articles reported in Haswell's Engineers' Manual, under the head of "Specific Gravity," only 25 are below 40 pounds per cubic foot, which gives but half a car load on the Denver and Rio Grande Railway. We have already seen what the results in this respect have been on the road during the last year.

Some of the most responsible and experienced car builders in the United States furnished the company with plans on which they agreed to build, for a gauge of 3 feet, cars which, for both passenger and freight, complying with all the conditions above enumerated, would avoid the evils which had become engrafted upon the wide-gauge rolling stock, and by really profiting, which the latter could not do for the reasons given, by the long years of experience had upon the railways of the United States, would be a *reformed* car, with the proportion of dead weight very greatly reduced.

As a resultant of all these various elements, the gauge of 3 feet was considered to best satisfy the largest number of the most important requirements, and was adopted. The strong desire of setting an example which all the narrow-gauge railroads to be built in the United States would find it to their interest to follow, whether in the East or West, sacrificing as little as possible in the extreme cases of location on the smoothest plains and in the most difficult mountains, and meeting best the average conditions of the topography and transportation business of the country, had a very considerable weight in influencing the decision, and it is with great satisfaction that we are able to announce the thorough success of the new tentative gauge in this respect. It has commended itself to the judgment of all narrow-gauge engineers, and without exception, so far as known, every narrow-gauge project in the United States has adopted the same width. There will be no war of narrow gauges.

The Union Pacific Railroad Company has, during the year, constructed the Colorado Central Railroad west from Denver of the same gauge,—3 feet,—on which the cars of the Denver and Rio Grande Railway will pass without transhipment.

So far as the actual results of the operation of this particular gauge on the Denver and Rio Grande Railway during the past year are concerned, there is no reason to regret the selection. It has proved entirely satisfactory, thoroughly suited to the economical rolling stock, and can now be considered as a fixed and permanent institution in the United States.

It is to be regretted that the new and unorganized condition of the business on the road, with its constantly changing terminus, and mixture of construction and commercial transportation during the past year, has prevented the furnishing in detail of actual results sufficiently reliable to afford correct deductions as to the relative cost of operating the line in comparison with broad gauge. It is manifestly very difficult to make a just comparison with another road, as questions are involved of relative transportation charges, prices of labor, gradients, curves, amount of gross business, etc.; but for the coming year an approximate deduction can probably be made. At the present time (April, 1873) the expenses in a business at the rate of about $4000 per mile per annum, are about 50 per cent. of the earnings, which, with ordinary labor at $2 per day, all skilled labor very high, supplies costly because of the remoteness from eastern markets, gradients 75 feet per mile, curves 6° per hundred feet, a new road bed, and small total business, must be considered as satisfactory. During the first year after its opening, the expenses on the Kansas Pacific Railway were 79½ per cent. of its gross earnings.

The rates charged by the company are about the same as those in use on most of the Pacific railways, but less than those of the Denver Pacific.

At these rates it is believed the present rolling stock is capable of earning a yearly revenue of $750,000 on the main line of 118 miles, which increase will give a great reduction in the percentage of expenses.

During the past year there were run one through freight and one through passenger train, and one local mixed train, daily. The local train being a necessity, and the through trains rarely having sufficient number of cars to haul to load them to the capacity of the engines, it follows that while the conditions were not such as to enable the company to realize the full benefit of the large saving in dead weight, yet that—the business and revenue remaining the same—there would have been just so many additional unpaying tons of car and engine (at least double as much as was actually carried) to haul over the road and across a summit which is 2000 feet above Denver, and 2500 feet above Pueblo, had the road been provided with broad-gauge rolling stock.

As Colonel Greenwood shows with great clearness, "after admitting the saving in first cost and interest on the same, the narrow gauge does not get the full benefit of its light cars until the business is sufficient to render necessary the use of locomotives with tonnage enough on driving wheels to handle as many cars as it is economy to put into one train."

At present the capacity of the existing light engines is not reached. The consequence is, that the large increase of business can be done without appreciable increase of the train or other expenses, and when the regular load becomes sufficient to warrant heavier engines, a business threefold can be done without necessarily increasing the number of trains over what they now are.

TRANSHIPMENT.

The cost of transhipment of freight from the broad-gauge roads at Denver is of course heavier in proportion, as the line has been so short. Its relative importance will be reduced as the line advances; also as the business becomes large enough to warrant especial provisions for facilitating it. Without any of these arrangements, and with labor at $2 per day, the cost to the company at Denver has been 10 cents per ton for coal, iron, lumber, etc., and 15 cents per ton for miscellaneous merchandise. It can probably be reduced hereafter 33 per cent.

As much less than one-fourth of the tonnage carried (exclusive of iron rails, etc., for construction) required to be transferred to or from another road, the absurdity of building an extravagant road, with heavy and vicious rolling stock, for the purpose of avoiding transhipment of freight coming from and to foreign roads, is clearly manifest.

The importance of this question of break of gauge between independent lines has been very much overrated, certainly so far as freight is concerned, and, without going as far as the authority quoted and approved by Mr. Seymour, "that a road 500 miles in length with a gauge that does not correspond with that of any line independent of its own control with which it connects, enjoys, in this respect, an enviable position," still there is no doubt that the difficulty of looking after the cars on foreign and distant routes, the additional cost of car repairs (nearly double), the loss of the cars for a long time to the local business of the line, and the necessity very generally entailed of returning them without load, has to a great extent over-balanced any advantage gained from the system of interchange, to say nothing of the great sacrifice entailed by the necessity of building one's own cars on a heavy and injurious plan to resist the shock of those of other people, and the compulsion to build the road itself at great extra cost, to carry these rolling hammers.

To sum up:

When the Denver and Rio Grande Railway Company was ready to start the construction of its road, and it became necessary to decide upon the gauge, the following condition of affairs was observed upon the wide-gauge roads west of the Mississippi River, and to a great extent throughout the United States:

1. That the weight of an ordinary freight car was from 8 to 9 tons empty; to carry from 8 to 10 net tons of freight (when fully loaded).

2. That the empty weight of a passenger car on these roads was from 15 to 18 or 20 tons, to carry 56 passengers (when fully occupied), and that of a sleeping car was 25, and more generally 30 tons, to sleep 28 persons.

3. But that while this was the *capacity* of the respective cars, yet that in the exigencies of business compelling quick delivery of goods, and from the inequality of trade in direction either regularly, or varying with the different seasons of the year, requiring many cars to be sent back but partially loaded or entirely empty, that the average load of the freight cars throughout the United States, for every mile they ran, did not exceed three tons, of the passenger day car less than 20 persons, and of the sleeping car not over 15.

The style of the cars for freight especially was generally admitted to be vicious and uneconomical, but it had followed out west from eastern roads, which, supported by dense population, could better stand the expense, and unless the idea of interchange should be abandoned, it became necessary to construct every new car weighty enough to stand the hammering which it would be sure to get from those already running. An occasional spasm for reform would prompt a line to build rolling stock of a wiser pattern,—narrowing and lightening the car, and reducing the centre of gravity,—but these modest beginnings would soon be knocked to pieces by the momentum of some heavy and higher rolling stock, perhaps from a far distant road, and so the evil went on rather increasing than otherwise, the roads being at the mercy of the heaviest cars, wherever they might have come from, or whatever may have been the special local reason or heresy which induced their construction. Again, the centre of gravity could not be lowered on new cars, because of the difficulty of loading at the platforms whose height was established throughout the United States.

As the light and heavy cars could not be run together, they all had to be heavy ones, and they were all, to use the idea of Fairlie, built to hold a gallon, although they did not have more than a quart to carry.

At a meeting of the National Association of Car Builders of the United States, it was concluded, after a most thorough discussion, that *practically* the evil could not be remedied, and that the roads must go on building these heavy and high-pitched cars.

But further, in order to transport this great load, amounting for cars and freight, as we have seen in practice, to nearly three times as much as the freight alone, it was necessary to use heavy engines; and this extra weight, with the extra weight and height of the cars themselves, required a different class of railway, heavier iron, joints, spikes, larger ties, more expensive bridges, besides the increased cost of the larger cars and locomotives, and above all, it required a wider and more expensive gauge than was necessary to carry rolling stock properly proportioned to the practical requirements of the transportation business.

But new roads had not hesitated to rush into this extraordinary expenditure, stimulated by the fact that the rates of charges of transportation could be high at the start, and unmindful that the great bulk of their business must finally be carried at very low rates per mile, or it could not be moved over long distances (as is now seen in the Mississippi Valley, where farmers are using their corn for fuel). It was true also of very many of them, that while they were adapted to carrying several millions tons per annum on a single track, they were actually carrying but a few hundred thousands, and often much less, and would scarcely be likely to reach even their full single-track capacity in ten years.

During all of this time, besides the extra expense of transporting the heavier cars and engines, the roads would be harassed by the interest carried upon the additional cost of construction at the high rates for money prevailing in the West, the only compensation being the luxury of having a road capable of doing, ten years before it would have it to do, ten times the business it was then doing (but in no event more than a narrow gauge could), and of being able to transport over it without unloading a car from New England or Pennsylvania, should one happen along.

But at 10 per cent. per annum a sum doubles very rapidly, and it was even susceptible of proof that a Western company, of average situation, would have saved enough in interest alone, had it built its road of narrow gauge, to have enabled it to rebuild entirely before the total cost of transhipment would have become a serious item; and if there was any question about the capacity of a narrow-gauge road (which question appears to have exercised some of them), they could have built another track with this saving, before it would have been required by their business.

If the cost of rails, and all other iron for railway purposes, had remained at what it was before the war (less than one-half of the present price), the useless loss of building these wide-gauge roads, with their corresponding rolling stock, would not be so serious as it is; but the chief cost of building most railroads, at least in the West, is that of the iron.

Quite as serious an evil was resulting to the country, also, from the impossibility of districts not as well populated as others, although filled with valuable resources, obtaining capital to build this expensive class of roads, and the lines were shut off from much valuable local traffic, and the beneficial results of additional development from the construction by these localities of numerous branches, which would have swelled the business of the main lines.

The belt of country benefited by the railroad, or that it could draw upon to benefit it, was thus greatly narrowed.

Further, as on nearly every road—even the Pacific roads—the local traffic, that which was does not come from, or go beyond, its termini, constitutes the bulk of its business, it is apparent to what an extent this major interest has been sacrificed to the minor, by the continuance of the system we have described.

It must also be evident how seriously the development of a country, and the consequent growth of business to the line, would be retarded by the necessity of establishing high rates of transportation, because of the heavier weight to carry and the greater annual load of interest.

The result of this outlook was to convince this company that it was best to take the bull by the horns, and having settled upon the general character of the car which would have the best proportion for economy and efficiency, and weigh the least in proportion to the load it would practically have to carry, to adopt a gauge as narrow as would safely and advantageously carry this vehicle.

If we had been projecting a road to carry stone houses, I suppose we should have adopted a broader gauge, and if we had expected to carry nothing but feathers, we might have been a little doubtful about the roominess of our car floor surface.

But the road was not expected to rely upon either of these extreme articles for its business, and the gauge was adopted which would carry advantageously the articles known to commerce.

That the gauge of 4 feet 8½ inches, which George Stephenson found prevailing in the case of the roads and wagons in the north of England to which he first applied locomotives, should necessarily be the best all over the world, for a new class of railways, and carriages of a highly improved character, would indeed be singular. While it might have been suitable for horse-power, and for an imperfect surface, it would surely have been extraordinary had this same width been the most advantageous for an entirely new machine—the steam railroad; and even had it been best for a small, densely, and uniformly populated island of smooth topography, it would not have followed that it was the proper gauge for a vast continent of great variety in the character of its surface, population, and development.

In fact it *was* contested from the beginning,—not, however, on the ground of being too wide, but too narrow. An able engineer, Brunel, claimed that 7 feet was a better gauge for England, and in the support of that claim urged, it is safe to say, with one exception,* every argument that has been adduced in later days to support this in behalf of the 4 feet 8½ inches gauge as against one still narrower.

---

* That of its being a change from the existing order of things.

Thus it happened that for 30 or more years, during which the war of the wide gauges has been going on, attention has been drawn away from the true direction for inquiry, to wit, whether the narrower of the two broad gauges was not too wide for true economy, and therefore for the greatest efficiency. Two competitive wide systems grew up alongside of each other in England, and to a less extent, thanks to our comparative poverty, in the United States. The results of that long struggle are well known. The wider gauge has retired from the field, except in the fancy of some early advocates who, from consistency or conviction, adhere to the teachings of Brunel; and, although civil engineers may continue to discuss the question, the practical men who have had to *operate* the railroads after they were built have settled it beyond recall, so that, in the words of one of the most practical of them, "You could not raise a dollar in the United States to-day to build a road of wider gauge than 4 feet 8½ inches."

Now, the narrower of the broad gauges is being seriously challenged in every country; while in the United States, where three feet has been adopted by the uniform judgment of narrow-gauge engineers, a large number of roads have organized, many of which are under construction and in operation, for sections varying from 12 to 156 miles each.

Thus it will be seen that the one admitted deficiency of narrow-gauge roads—that they are different from the existing ones, and prevent interchange of cars for through business*—is about to be removed; that a narrow-gauge system is rapidly growing up, with the latest improvements in rolling stock, which will afford all the benefits of this interchange without many of the disadvantages which accompany it on the old roads.

We have explained the reasons which induced the company to adopt the gauge of three feet, and show how it has operated on the road thus far, but have refrained from polemical discussion, holding in wholesome veneration the thirty years' war between Stephenson and Brunel, with their followers, and will here leave the subject until still further actual experience has enabled us to state something new.

WM. J. PALMER.

---

* A deficiency whose *relative* importance, however, has been shown to be insignificant.

STATEMENT

Showing Size and Capacity of the Rolling Stock of the Denver and Rio Grande Railway.

The eight-wheeled coal cars average 24 feet long, weigh 7500 lbs., and carry 8 to 9 tons.

The eight-wheeled flat cars average 24 feet long, weigh 6000 lbs., and carry 8 to 9 tons.

The eight-wheeled box cars average 24 feet long, weigh 8000 lbs., and carry 8 tons.

The eight-wheeled stock cars average 24 feet long, weigh 9000 lbs., and carry 8 to 9 tons of heavy freight.

(9 to 13 head of cattle or 9 head of horses are carried on the stock cars.)

The four-wheeled flat cars are 16 feet long, weigh 3000 lbs., and carry 4 to 5 tons.

Other four-wheeled flat cars are 12 feet long, weigh 2800 lbs., and carry 4 to 5 tons.

The four-wheeled box cars are 12 feet long, weigh 3500 lbs., and carry 4 to 5 tons.

The first-class passenger coaches weigh 12,000 lbs., and carry 33 passengers.

The second-class passenger coaches weigh 11,000 lbs., and carry 27 passengers.

The special chair cars weigh 12,000 lbs., and carry 20 passengers.

The passenger locomotives weigh 25,000 lbs., of which 20,000 lbs. are on 4 drivers.

The freight locomotives weigh 35,000 lbs., of which 30,000 lbs. are on 6 drivers.

All the freight cars hereafter built by the company will be eight-wheeled bogie cars.

LETTER OF GENERAL WM. S. ROSECRANS TO COLONEL W. H. GREENWOOD.

(*Oficinas del Administrador Mexicano.*)
MEXICO, April 8, 1873.

DEAR SIR,—Educated Mexican engineers and many people here understand some advantages of that great advance in railway science—the reduction of the width of the gauge, to secure railways which can be cheaply constructed and economically operated.

But existing and speculative interests, appealing to timid conservatism, try to inflict on this, as yet almost free country, the gauge of 4 feet 8½ inches.

In vain we tell these timid conservatives that practical England, prudent Russia, economical Norway and Sweden, have adopted this improvement after careful examination and full deliberation. In vain they hear that in the United States railway companies are free to choose the gauge they deem best for their traffic, and that the interest of the investment affords the best guarantee that the lines will, at all times, be made to transport all the passengers and freight they can obtain, and that this would be more pre-eminently the case in Mexico, where population is not so dense nor commerce so great.

People seem to have become convinced that engineers are correct in saying that a 3 feet gauge can be built cheaper and worked cheaper. But, among the over-cautious and ignorant, the interests to which I have alluded have been sowing doubts as to the capacity of the 3 feet gauge road to suffice for the wants of through interoceanic traffic.

As, so to speak, you have been born, reared, and educated to the construction of railways of wide gauge, and are the Chief Engineer of the Denver and Rio Grande Railroad, with a 3 feet gauge, please favor me with brief answers, founded on the results of your information and experience, to the following questions:

1. What average percentage of economy would there be in the first cost of construction and equipment of a 3 feet over a 4 feet 8½ inches gauge railway?

2. What percentage of saving, in the total expenses of working, could be fairly expected, the traffic being supposed exactly equal?

3. What, in other countries, is about the mean annual tonnage hauled per kilometer?

4. What is the annual tonnage, per kilometer, upon some of the greatest railways of the United States?

5. Have these reached their capacity to transport, or could and would they take more freight and passengers if they could take them?

6. What are some of the lowest averages of annual traffic per mile in the United States?

7. About what proportion of the roads are below the mean traffic, and what above it?

8. Could a 3 feet gauge road, properly equipped, transport an average per mile equal to the greatest traffic, on any railway, in the United States?

9. How would the probable traffic, on the Interoceanic trunk line for years to come, compare with this greatest traffic in the United States?

10. How with the *average* of our first-class roads?

11. Should the increase of traffic outrun the capacity of the 3 feet gauge, what would be the remedy, and who would pay the expense of applying it?

Please give your reasons for your opinion respecting the capacity of the 3 feet gauge to supply all the wants of freight and passenger traffic on the main line.

Yours truly,

W. S. Rosecrans.

Colonel W. H. Greenwood,
Chief Engineer of Mexican Nat. Railway Co.

REPLY OF COLONEL WM. H. GREENWOOD.

Mexico, April 11, 1873.

General W. S. Rosecrans,
Mexican Manager Mexico Nat. Railway Co.:

Dear Sir,—In reply to your communication of the 8th instant, I have the honor to submit the following answers:

1. *Average percentage saved.*

I am satisfied that, in the lines from this point to Toluca and Querétaro, the saving in first cost of location, grading, bridging, superstructure, and rolling stock of a first-class 3 feet road, like the Denver and Rio Grande Railway (which I have had the honor to construct and operate from the date of its first inception up to the present time), with that of the usual standard 4 feet 8½ inches gauge, say the Mexico and Vera Cruz, would be about 33 per cent., and the 3 feet road would be superior in every respect to the 4 feet 8½ inches road; I use the word superior in its broadest financial sense. None but railroad managers can fully appreciate this question, for they alone know how much easier and better it is to run a road that is earning enough to pay good men good prices, the interest on the first cost of the road, and have a little left to apply to the improvement of the road, rolling stock, stations, and general development of the great resources of the country, than it is to run one that is not *paying*.

2. *Saving in operating expenses.*

This saving depends on many variable elements: such as the class of business and the quantity of business done by the road. Practical experience has not furnished data to answer this positively. But six years' experience in Norway on the same amount of traffic shows a saving of $380 per kilometer on maintenance of way and $2280 per kilometer on locomotive power, as deduced from the following table:

	Gauge 4 feet 8½ inches.	Gauge 3 feet 6 inches.	Difference in favor of the Narrow Gauge.
Cost of construction per mile . .	$26,343	$17,143	$9,200
Receipts per mile (alike)	27,600	27,600	....
Maintenance per mile	7,143	6,575	608
Locomotive expenses per mile. .	9,426	5,760	3,666

3. *Mean tonnage hauled by standard roads of the old or new country.*

The official returns of 131 first-class roads in the United States, as reported in Poor's Railway Manual for 1870, show the average tonnage of the whole number to be 3,603 tons per mile per annum; the average passenger traffic of the same roads being 6,228 per mile per annum.

4. *Greatest average traffic per mile, in the United States.*

This varies with the kind of business that each road has to perform—some roads doing a very large passenger and very small freight business, while other roads work "vice versa;" for instance, the Central New Jersey Railroad transports 100,169 passengers per mile per annum, and only 2,015 tons freight per mile; whereas the Cumberland and Pennsylvania transports only 1,820 passengers per mile, but carries 30,592 tons freight per mile per annum.

5. *Have any of the roads reached their capacity, or could they move more freight and passengers if they could obtain them?*

There is not a railroad in the world but that would be glad to have more business, if it could be obtained. The question of capacity is simply one of how many tracks and how much rolling stock a road may have. A large number of the best roads in the United States and in Europe are talking of laying a third track.

6. *What are some of the best averages of annual traffic per mile on these roads?*

	Per mile per annum.
Cumberland and Pennsylvania	30,592 tons
Philadelphia and Reading	19,746 "
Cincinnati and Dayton	15,235 "
Cleveland and Toledo	10,538 "
Boston and Worcester	16,980
Delaware and Lackawanna	8,447

7. *About what proportion of the roads are below, and what portion above, the average traffic?*

According to Poor's Manual, about three-fourths are below and one-fourth above the average.

8. *Could a 3-feet gauge road, with proper equipment, transport an average per annum equal to the greatest traffic on any road in the United States?*

Yes, it could, without the least trouble. The Festiniog Road of Wales, gauge 1 foot 11½ inches single track, transports annually 9,388 tons of freight per mile, or nearly three times as much as the average of the roads in the United States, and it is not employed to near its full capacity.

9. *How would the probable traffic on the Interoceanic Trunk Line, for years to come, compare with the greatest traffic in the United States?*

I think it would be some years before the traffic on this line would come up to this average, and more before it would be found necessary to lay a double track, even on the 3-feet gauge, and much longer before a broad gauge of the usual standard could afford to construct a double track.

10. *How with the average of our first-class roads?*

I should judge it would take five years to bring the business anywhere near to that which our first-class roads are now doing; it certainly would, should the business increase no faster than it did on the roads which we would indicate as first-class in a business point of view.

11. *Should the increase of traffic outrun the capacity of the 3-feet gauge, what would be the remedy, and who would pay the expense of applying it?*

The increase of business could not outrun the capacity of the 3-feet gauge, for a 3-feet road can handle as many passengers, and as many tons of freight per day or annum, as a broader gauge; and, with the improved engines and cars which are being adopted, I know it can do more. With a very heavy business, either the 3-feet or the broad gauge would find it for their interest to multiply the number of their tracks to a double or triple line, and the 3-feet road could do this much sooner than the broad gauge, with its costly road, could afford to.

I cannot refrain from calling your attention here to a few of the leading errors that are so common with regard to the broad gauge. Experience, as well as theory, has shown that not one box-car in ten is filled, even in through freight; or, in other words, the narrow-gauge cars are, nine out of ten, larger than is necessary to have them, in order to carry the number of tons which each car is allowed to load. Standard gauge cars are constructed to carry ten tons, at the most; narrow gauge to carry eight tons. Experience has demonstrated that, in cars of the standard (4 feet 8½ inches) gauge, not over three or four tons are carried on an average in each car. Hence, the narrow-gauge cars have more capacity than is necessary for economy.

A considerable portion of the business of a railroad is done by permitting private parties to load a car, under the agreement that not over ten tons shall be loaded in the cars of the standard gauge, or eight tons in cars of the narrow gauge; but as the cars will almost always hold three or four times that amount (see the table below), the parties loading the car often put in more than the prescribed ten or eight tons. Should the railway company not be aware of this, they receive pay only for the supposed load in the car. But there is another trouble worse than this,—the extra load causes the bearings of the car to heat and burn, so that by the time the car reaches its destination, the company have lost more by the damage to the car than they have earned by the freight. The smaller size of the narrow-gauge cars renders the loss from this cause smaller than that by the broad-gauge cars, and the company's gain, in this respect, more than compensates for the loss incurred on the rare occasions when the freight is so bulky that the car will not hold the full amount permitted to be loaded. The table below will show, regarding a few articles of common railway transportation, the weight per cubic foot of each article; the number of cubic feet in a car occupied by a full load, in weight of cars of 3-feet gauge (capacity eight tons each); and the proportion of the total space in each car (capacity 800 cubic feet) actually occupied by the full weight of the articles enumerated.

SUBSTANCES.	Weight per cubic foot.	Feet in 1 car load.	Proportion of car used.
Iron	450 lbs.	36 c. ft.	$\frac{1}{22}$
White pine	34 "	471 "	$\frac{1}{2}$
Common earth	137 "	117 "	$\frac{1}{7}$
Bituminous coal	80 "	200 "	$\frac{1}{4}$
Beer	$64\frac{6}{10}$ "	248 "	$\frac{1}{3}$
Sugar	100 "	160 "	$\frac{1}{5}$
Salt	133 "	120 "	$\frac{1}{7}$
Charcoal, pine	$27\frac{1}{2}$ "	582 "	$\frac{3}{4}$
" oak	98 "	179 "	$\frac{1}{5}$
Cotton, pressed	20 "	800 "	1

Of 300 articles reported in Haswell's Engineers' Manual under the head of Specific Gravity, only 2 are below 20 lbs. per cubic foot, which is just equal to a full car load, and 275 are *above* 40 lbs. per cubic foot, which is exactly half a load.

Freight cars of the Denver and Rio Grande Railroad, when carrying a load of 5½ tons freight each, are no heavier than the usual *empty* cars of the 4 ft. 8½ inch gauge.

Another advantage of the narrow-gauge cars is that they can be drawn by horses to any mine, warehouse, wharf, or other point for loading or unloading, with much more ease than the heavy broad-gauge cars.

* * * * * * * * * * * * *

Engineers of the present day, taking lessons from the experience of their predecessors, confess that they have no idea as to what new improvements may yet be introduced in everything relative to transportation.

If, in order to overcome the great obstacle "which is put in the way of the narrow gauge by break of bulk," the world adopts the broad gauge, then the world must accept, as well, the disadvantages known to exist in the broad-gauge rolling stock, which railroad managers have been for years trying to improve.

The amount of capital invested in broad-gauge rolling stock is so vast, that the immediate loss incurred by sacrificing their heavy cars and adopting the lighter cars now used with so much success by the narrow-gauge roads, is greater than the prospective gain. Light and heavy rolling stock cannot be used in the same train.

To all new roads this is a vital question, and, while they have no intention of injuring the broad-gauge roads, they are unable to see why they should adopt a gauge against their own interest.

The narrow-gauge system does not mean simply—less width between the rails. It means common sense, applied to the information gained, after long years of experience and close application to business, by railway managers.

"Narrow-gauge" means—

1. Don't attempt to construct a road or paying division, until you have money enough to complete it and to buy all the rolling stock needed.

2. Build your road according to the requirements of your business, and not build an expensive road to do a moderate traffic. In other words, don't build a sixteen-mule wagon to carry a cargo of charcoal, when one *burro* will do the work as well.

3. Adopt such rolling stock as experience has shown to be the best; that is, while making it stronger and better, at the same time make it lighter and less costly; then place the floor of the car as near the track as possible, so as to lower the centre of gravity, making the car safer and steadier.

On the Festiniog Railroad the cars moved, on account of the centre of gravity being so low, as steadily over their 20 degree curves as broad-gauge cars do over a 9 degree curve.

The following extract from a report of B. H. Latrobe is one of the strongest arguments used in favor of narrow gauge, as per our 1st and 2d axioms above:

"The Baltimore and Ohio Railroad, the 'pioneer' railroad of the United States for general transportation, began to open its road by sections in 1830 with a plate rail of about 14 pounds per yard upon a longitudinal bearing timber 6+6, on which structure in 1832 it placed its first locomotive of 6½ tons. In 1836 it had increased the weight of its engines up to about 9 tons, and this progressive increase continued until in 1844 their weight had advanced to 20 tons. In 1838 a part of their track was relaid with a T rail of 52 pounds per yard, and their new road beyond Harper's Ferry was laid with a rail of that weight in 1842, but the general reconstruction of their old superstructure was not entered upon until 1846, when it was rebuilt with a similar rail. Their earliest engines (6½ to 8½ tons) had upright boilers, with all the four 2-feet wheels connected, were very powerful for their weight, and would traverse curves of 60 feet radius, and so would have well suited the hard curves of the narrow gauge."

Perhaps Mr. Latrobe will favor the public with a statement of what the financial condition of the Baltimore and Ohio Railroad would have been had they built at first the expensive road which they now have, instead of (as they did) adopting the narrow-gauge principle of light rails and light cars to do a moderate business. New roads wish to start on the same financial basis which was adopted by those far-seeing capitalists, only using the improved track of the present narrow gauge.

When the Baltimore and Ohio Railroad first started, its course lay, not through a new, but through an old settled country.

As the above extract shows, they laid 44 pounds strap rails, and built light rolling stock ; these sufficed to do the business, and do it well, for 16 years. Now note the savings—which they made, by *not* laying the 52 pounds rails *at first*, and *not* investing in heavier rolling stock and superstructure :—

1 mile rails, 52 pounds per yard, at 5 cts. per pound	$9,152
1 mile rails, 14 pounds per yard, at 5 cts. per pound	2,464
Saving, per mile, on rails alone	$6,688

which being paid for with bonds bearing 7 per cent. interest per annum, payable semi-annually, and said interest being compounded, amounts, in 16 years, to the snug little sum of $20,108—14 per cent. per mile; but, as the saving in rails was only a small part of the total saving, it is safe to assume that the total saving was three times that on the rails alone, making a saving in 16 years of over $60,000 per mile. This saving is sufficient to build double the number of miles of branch lines (those wonderful feeders of trunk lines, which develop a country so rapidly) as there were miles in the main line.

200 miles of branches, in addition to 100 miles of trunk line, of this cheaper road, does far more towards developing a country than a single 100 miles of an expensive main line, as India and our Southern States

have learned to their sorrow. The improvement of the main line can be effected at any time, when it is warranted by the business and the financial condition of the road.

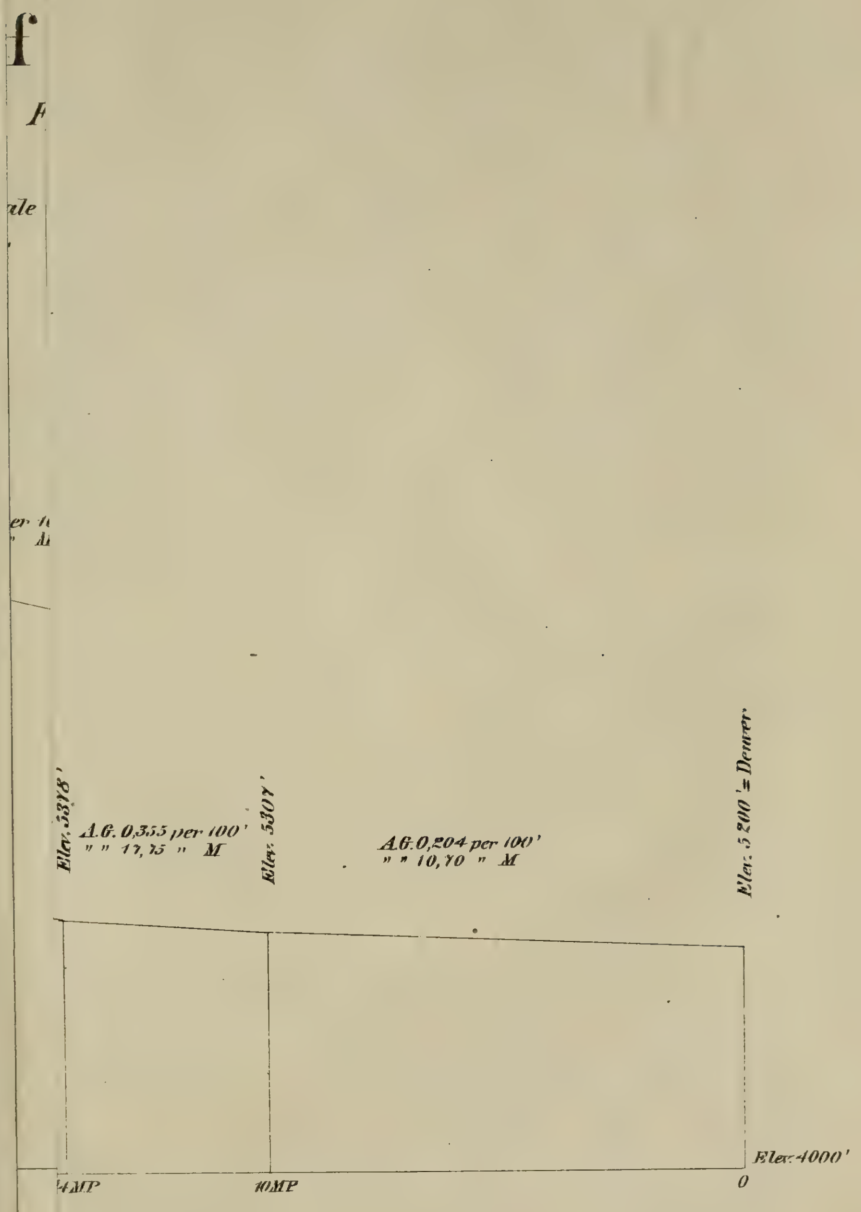
It is no wonder that the Baltimore and Ohio Railroad has become one of the leading roads of the United States, for it was constructed on true principles of economy. All new companies may profit by the lesson.

Very respectfully yours,

W. H. GREENWOOD,
Civil Engineer.

STATEMENT showing Grades, Length of Tangents, and Curves on the Denver and Rio Grande Railway, from Denver to Pueblo and thence to Coal Bank (Arkansas Valley Branch).

	Elevation.	Distances. Miles.	Maximum Grade.	Average Grade per Mile.	Length of Straight Line.	Length of 0° 30′ Curve. Radius, 11459′.	Length of 1° Curve. Radius, 5730′.	Length of 1° 30′ Curve. Radius, 3820′.	Length of 2° Curve. Radius, 2865′.	Length of 2° 30′ Curve. Radius, 2292′.	Length of 3° Curve. Radius, 1910′.	Length of 4° Curve. Radius, 1433′.	Length of 4° 30′ Curve. Radius, 1274′.	Length of 5° Curve. Radius, 1146′.	Length of 5° 30′ Curve. Radius, 1042′.	Length of 6° Curve. Radius, 955′.	Length of 7° Curve. Radius, 819′.	Length of 8° Curve. Radius, 717′.	Length of 9° Curve. Radius, 637′.	Length of 10° Curve. Radius, 574′.	Length of 12° Curve. Radius, 478′.
From Denver to Divide............	5200′ 7186′	52	75	38′.2″	178.075′	100′	31.185′	1.523′	33.125′	1.820′	20.041′	3,616′	.990′	1.509′	....	1,826′	....	....	....	....	,750′
From Divide to Colorado Springs.....	5947′	23	75	53′.8″	63.221′	380′	2.736′	....	6.039′	2.620′	10.648′	7.301′	......	5.862′	1.163′	21.470′	....	....	....	....	....
From Colorado Springs to Pueblo...........	4659′	42½	42	30′,3″	184.844′	......	4.103′	....	11.732′	....	4.680′	6.601′	......	3.620′	....	8,820′	....	....	....	....	....
From Pueblo to Coal Banks.........	5330′	37$\frac{4}{5}$	39	18′.8″	78.096′	......	3.745′	....	8.629′	....	22,000′	14,000′	......	5.740′	....	32.750′	12.600′	3.200′	14.034′	2,300′	3.546′

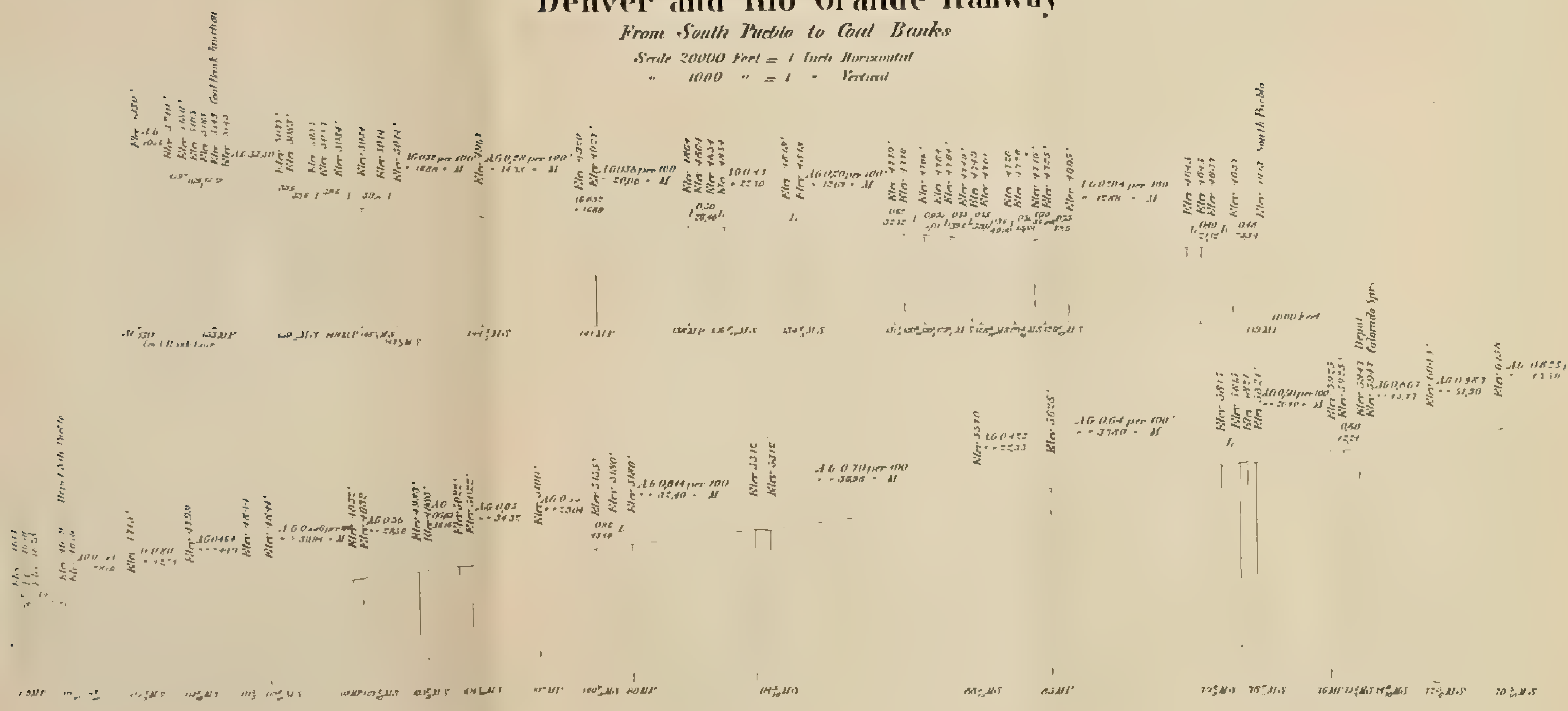


CALIFORNIA STATE LIBRARY

Profile of Arkansas Valley Branch Denver and Rio Grande Railway

From South Pueblo to Coal Banks

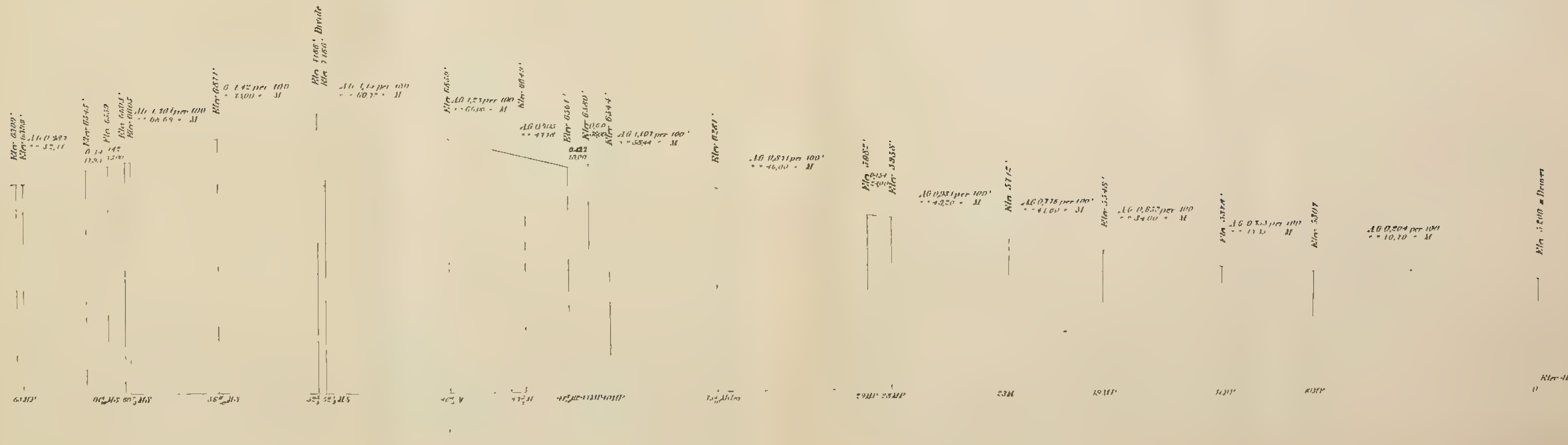
Scale 20000 Feet = 1 Inch Horizontal
" 1000 " = 1 " Vertical



Profile of Line of Denver and Rio Grande Railway

From Denver to Pueblo

Scale 20000 Feet = 1 Inch Horizontal
" 1000 " = 1 " Vertical



FUNDED DEBT, JANUARY 1, 1873.

DESCRIPTION.	Date of Issue.	Date of Maturity.	INTEREST.		First Coupon Due.	TOTAL AMOUNT OUTSTANDING.
			Rate per Cent.	Payable.		
First Mortgage Bonds	Nov. 1, 1870.	Nov. 1, 1900.	7 per ct. gold.	May & Nov.	May 1, 1873.	$2,795,000 00
First Mortgage Bonds, with no Interest, maturing before May 1, 1874	Nov. 1, 1870.	Nov. 1, 1900.	7 per ct. gold.	May & Nov.	May 1, 1874.	225,500 00
Total Amount of Funded Debt, as shown in General Account, . . .						$3,020,500 00

Floating Debt—Nothing.

WM. WAGNER, Auditor.

DENVER AND RIO GRANDE RAILWAY.

CLASSIFIED TONNAGE REPORT.

Statement of Freight Forwarded during the Year ending Dec. 31, 1872.

FROM	Lumber, Sash, and Doors.	Wood.	Stone and Lime.	Wool and Hides.	Merchandise and Sundries.	Grain, Flour, and Feed.	Wagons and Ag'l Impl'ts.	Live Stock.	Coal.	U. C. Co. Material.	Government.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Denver	1,464,565				11,374,684	5,236,438	586,616	377,655		10,244,090	1,438,480
Littleton					108,846	1,229,242				144,000	
Acequia and Plum	1,802,589	42,500	202,000		9,159					109,358	
Mills Nos. 1 and 2 and Citadel	2,204,714	5,088,000			27,765					56,000	
Wood and Rock Switch and Douglass	1,318,234	1,375,000	1,269,075	325	171,314					1,195,000	
Larkspur	9,367,909	4,937,500	85,000	990	153,285					4,186,454	
Greenland and Divide	1,524,958	17,500			5,225	94,810				1,014,114	
Henry's, Borst's, and Husted's, and Monument	8,830,770	55,000		11,810	317,139	16,000				4,683,993	
Colorado Springs	1,720,845			244,732	450,531	60,125				549,178	
Fountain and Little Buttes	60,000			121,950	41,582					260,000	
Pueblo	74,415			415,807	456,320				332,565	18,500	
Swallows, Coal Bank			16,000	2,247	485				7,797,549	191,000	
Total	28,368,999	11,515,500	1,572,075	797,861	13,116,335	6,636,615	586,616	377,655	8,130,114	22,951,687	1,438,480
Total Tons	14,184,^{999}	5,757,^{1500}	786,75	398,^{1861}	6,558,^{335}	3,318,^{615}	293,^{616}	188,^{1655}	4,065,^{114}	11,475,^{1687}	719,^{480}

DENVER AND RIO GRANDE RAILWAY.

CLASSIFIED TONNAGE REPORT.

Statement of Freight Received during the Year ending Dec. 31, 1872.

At	Lumber, Sash, and Doors.	Wood.	Stone and Lime.	Wool and Hides.	Merchandise and Sundries.	Grain, Flour, and Feed.	Wagons and Ag'l Impl'ts.	Live Stock.	Coal.	U. C. Co. Material.	Government.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Denver	22,126,202	11,177,500	1,556,075	797,861	1,094,240	476,834	....	....	5,074,750	2,978,315	....
Littleton	644,537	175,000	....	....	319,472	348,984	....	....	32,000	....	....
Acequia and Plum	203,765	....	....	....	111,326	134,979	....	....	....	....	....
Citadel	24,815	....	....	....	88,615	38,135	....	....	....	....	....
Douglass	13,845	....	....	....	92,038	76,404	....	....	....	....	....
Larkspur	72,925	....	....	....	289,371	268,273	....	....	....	....	....
Greenland and Divide	50,575	25,500	....	....	73,859	18,110	....	....	21,375	....	....
Henry's, Borst's, and Husted's, and Monument	83,708	....	....	....	416,402	303,751	....	....	....	....	....
Colorado Springs	3,520,225	75,500	....	....	5,172,881	2,955,290	239,816	67,255	953,995	5,762,954	....
Fountain and Little Buttes	....	....	....	....	909,370	277,340	16,000	48,000	....	3,574,662	675,980
Pueblo	1,481,342	62,000	16,000	....	4,402,472	1,715,515	330,800	262,400	2,047,994	10,635,756	762,500
Labran, Coal Banks, etc	147,060	....	....	....	146,289	23,000	....	....	....	....	....
Total	28,368,999	11,515,500	1,572,075	797,861	13,116,335	6,636,615	586,616	377,655	8,130,114	22,951,687	1,438,480
Total Tons	14,184,^{999}	5,757,^{1500}	786,75	398,^{1860}	6,558,^{335}	3,318,^{615}	293,^{616}	188,^{1655}	4,065,^{114}	11,475,^{1687}	719,^{480}

MACHINERY DEPARTMENT.

The Company has in Service (May, 1873),

Locomotives and tenders,—		
Freight engines	10	
Passenger engines	4*	
		14
Passenger cars,—		
First-class	8	
Second-class†	2	
		10
Baggage, mail, and express cars		4
Excursion cars		4
Box " (8-wheeled)		46
Stock " "		4
Flat " "		52
Coal and gondola cars (8-wheeled)		52
Calaboose cars (4-wheeled)		4
Box " "		10
Flat " "		80
Coal " "		10
Inside dump for gravel-train cars (4-wheeled)		12
Outside " " " "		10
Hand cars (4-wheeled)		13
Push " "		8
Total number of pieces rolling stock		333
Trucks on hand ready for woodwork (sets)		22
Passenger trucks " " " "		1
Snow plows (exclusive of small plows to engines)		2

---

* Including one Fairlie engine in transit to Colorado, and one large freight engine being constructed.

† Including one passenger car being constructed and two in transit to Colorado.

APPROXIMATE STATEMENT

Of the Length of Side-tracks on the Denver and Rio Grande Railway and Arkansas Valley Branch.

Denver Station, at depot	2,000 feet	
" " coal yard	500 "	
" " Sloan's lumber yard	800 "	
" " stone works	100 "	
Total amount of siding at Denver Station		3,400 feet
Shops 2 miles south of Denver		3,000 "
Littleton		1,000 "
Acequia		700 "
Kelley's		100 "
Plum		1,000 "
Mill No. 1		800 "
Mill No. 2		1,000 "
Citadel		1,000 "
Douglass		800 "
Wood yard		1,200 "
Rock Switch		100 "
Larkspur, including a Y		2,000 "
Greenland		400 "
Divide, including branch into turn-table		1,000 "
Henry's		1,500 "
Borst's		100 "
Husted's		500 "
Monument		400 "
Colorado Springs		1,500 "
Widefield		500 "
Fountain		500 "
Little Buttes		500 "
Piñon		500 "
Pueblo		1,000 "
Coal yard at Pueblo		300 "
Total No. of feet of sidings on main line		24,800 "

Arkansas Valley Branch (under construction).

South Pueblo, including Y	1,500 feet	
Meadows	500 "	
Swallows' Nest	400 "	
Carlile Springs	400 "	
Beaver Creek	300 "	
Labran	800 "	
Coal banks	1,000 "	
Total length of siding on Arkansas Valley Branch		4,900 feet
Total length of siding on main line and branch		29,700 feet

Or a total of 5⅝ miles.

STATEMENT OF THE BUILDINGS

Belonging to the Denver and Rio Grande Railway Company, January 1, 1873.

Passenger depot at city of Denver.
Freight depot at city of Denver.
Brick shops near Denver.
Brick blacksmith shop, Denver.
Frame erecting shop, Denver.
Frame storehouse, Denver.
Brick round house, Denver (5 stalls).
Engine house at Divide, and turn-table.
Passenger house at Colorado Springs.
Freight house at Colorado Springs.
Hotel at Colorado Springs.
Freight house at Little Buttes.
Freight and passenger house at North Pueblo.
11 water tanks on main line.

Arkansas Valley Branch.

Brick freight house, South Pueblo.
Wooden storehouse, South Pueblo.
5-stall round house, South Pueblo.
Engineer's office, South Pueblo.
Freight house (for government goods), South Pueblo.
Freight and passenger house, South Labran.
2 water tanks on Arkansas Valley Branch.

MORTGAGE BOND

OF THE DENVER AND RIO GRANDE RAILWAY COMPANY.

Following is the form of the bond of the company. The issue is secured by a deed of trust, duly authorized and recorded:

UNITED STATES OF AMERICA.

First Mortgage
Seven per cent. Gold Loan.
Colorado.
$1000. No. —

Issued at average
rate of $16,000 per mile.
New Mexico.
£206. No. —

The Denver and Rio Grande Railway Company promises to pay J. Edgar Thomson, or bearer, on November 1st, 1900, at the Company's Agency, in the city of New York, one thousand dollars in United States gold coin, of, or equal to, the present standard, or if preferred by the holder, two hundred and six pounds sterling, in London, at the Company's Agency, with interest thereon at seven per cent. per annum, free of United States taxes, semi-annually, on May 1st and November 1st, in like gold coin, on the presentation and surrender of the annexed coupons therefor; such interest to be paid either in New York, Amsterdam, or London, at the option of the holder, as specified in the coupons. In case of default in payment of such interest when due, and continued for sixty days after maturity thereof, the principal of this Bond will become due and payable upon the conditions provided in the Trust Deed hereinafter mentioned. This is one of the Bonds to the amount of $14,000,000, of like tenor and date, issued and to be issued in denominations of $500 and $1000, the payment whereof is secured by a Deed of Trust of even date herewith, made by said Company to J. Edgar Thomson and Samuel M. Felton, of Philadelphia, and Louis H. Meyer, of New York, as trustees, covering the Company's main line of railway and telegraph and the franchises thereof, from Denver to El Paso, a distance of about eight hundred and seventy-five miles, with the appurtenances and equipments acquired, and to be acquired, and also lands that may at any time be granted by the United States, Colorado, or New Mexico to aid the construction thereof, as provided in the Trust Deed, which Trust Deed is a first lien upon said railway and telegraph, and upon said lands when obtained. This Bond is entitled to the benefit of a sinking fund, as provided by said Trust Deed.

In testimony whereof the said the Denver and Rio Grande Railway Company hath hereunto affixed its corporate seal, and caused the same to be attested by the President and Secretary, in pursuance of a resolution of its Board of Directors, on the 13th day of April, 1871.

This Bond shall not become obligatory upon the Company until the certificate indorsed hereon is signed by the Trustees.

Wm. J. Palmer, *President.*
Howard Schuyler, *Secretary.*

Interest payable semi-annually in New York, Amsterdam, or London, at option of holder.

FORM OF COUPON.

$35.00. Coupon. £7 4*s.* 5*d.* No. Fl. 86.

The Denver and Rio Grande Railway Company will pay to bearer, as he may elect, at the Company's Agencies respectively in New York City, $35.00 United States gold coin; in London £7 4*s.* 5*d.* sterling, or in Amsterdam 86 Florins, free of United States taxes, on the first day of ——— ——— being six months' interest on Bond No. —

Howard Schuyler, *Treasurer.*

INDORSED ON BACK OF BOND.

No. —

The Denver and Rio Grande Railway Company first mortgage seven per cent. Gold Bond, $1000. Principal payable November 1st, 1900, in New York, in gold dollars, or in London in pounds sterling, at option of holder.

Interest payable in gold, free of United States taxes, at agency of Company in New York, Amsterdam, or London, at option of holder.

We certify that this Bond is one of the bonds secured by the Deed of Trust within referred to.

J. Edgar Thomson,
S. M. Felton, } *Trustees.*
L. H. Meyer,

REGISTRATION.

This Bond may be registered in the owner's name on the Company's books, in the city of Denver, or at any other place which the Company may determine, such registry being noted on the Bond by the Company's Transfer Agent, after which no transfer shall be valid unless made on the Company's books by the registered owner, and similarly noted on the Bond; but the same may be discharged from registry by being transferred to bearer, after which it shall be transferable by delivery; but it may be again registered as before.

The registry of the Bond as above shall not restrain the negotiability of the coupons by delivery merely, but the coupons may be surrendered and the interest made payable only to the registered owner of the Bond.

(The bonds and coupons for $500 are the same in all respects except amount.)

CERTIFICATE OF THE DENVER AND RIO GRANDE RAILWAY COMPANY.

Whereas, We the undersigned desire to form a company and to become a body corporate under and by virtue of the provisions of chapter eighteen (18) of the revised statutes of the Territory of Colorado, for the objects and purposes hereinafter set forth ; now, therefore, this is to certify as follows, viz.:

1. That the corporate name of said company shall be the Denver and Rio Grande Railway Company.

2. That the object of said company is to locate, construct, operate, and maintain certain railways and telegraph lines hereinafter named and described, and to acquire, improve, and dispose of lands or any interests therein, either absolutely or conditionally, for the purpose of aiding in the construction and business of said railways and telegraph lines, and in any manner promoting the interests of the same. The said railways and telegraph lines are named, described, and by routes are designated as follows:

1. THE DENVER AND RIO GRANDE RAILWAY.

The route of this railway is described as follows: Commencing at Denver, Colorado Territory, thence running up the Valley of the South Platte River, on the southeast side thereof, to a point at or near the mouth of Plum Creek; thence up the Valley of Plum Creek to a point at or near the forks of East Plum Creek and West Plum Creek; thence up the main East Branch of Plum Creek Valley, to the lake in township eleven (11), range sixty-seven (67) west, on the crest of the ridge dividing the waters of Plum Creek and Monument Creek; thence down the Valley of the Monument Creek to a point at or near the junction of the Valleys of the Monument and Fontaine qui Bouille, or to a point in the Fountain Valley below the mouth of the Monument, if the detailed surveys shall determine the latter to be most eligible; thence by the Valley of the Fountain, or across its west tributaries, to such a point on the Arkansas River at or above Pueblo, as may be found upon a detailed survey to be the most eligible for intersecting the same; thence up the Valley of the Arkansas River to a point at or near Cañon City; thence continuing up the Valley of the Arkansas through the big cañon of the same to a point at or near the mouth of the South Arkansas River; thence by the valley or adjoining slopes of the South Arkansas River and of the Puncho Creek to the summit of the divide between the waters of the Arkansas and the San Luis Park, known as Puncho Pass; thence by the most eligible route in a general southerly direction down the San Luis Valley to the Valley of the Rio

Grande del Norte; thence in a general southerly direction, by the particular route which may be determined upon a detailed survey to be the most eligible, down the Valley of the Rio Grande to the southern boundary of Colorado; thence continuing down the Valley of the Rio Grande, on either side of the river as may be found expedient, or crossing from one side to the other when desirable, to El Paso, in the State of Chihuahua, with the privilege of consolidating or uniting with and operating, any connecting railway in the Republic of Mexico.

2. THE DENVER AND SOUTHERN RAILWAY.

Commencing at the most eligible point on said Denver and Rio Grande Railway in the Valley of the Arkansas, or of the Fountain, and running in a general southerly direction to the base of the Spanish Range of the Rocky Mountains; and thence, crossing said Range by the Sangre de Christo, Cucharas, Las Animas, or such other pass as detailed survey may determine to be the best, to the Valley of the Rio Grande; thence down the Valley of the Rio Grande to a connection with the Denver and Rio Grande Railway, or to El Paso.

3. THE SOUTH PARK RAILWAY.

Commencing at a point on the said Denver and Rio Grande Railway, in the Valley of the South Platte River, at or near the mouth of Plum Creek; thence up the Valley of the South Platte River, to the mouth of its big cañon; thence through said big cañon and up the Valley of the South Platte to the South Park, still following up the Valley of the South Platte to a point at or near the town of Fair Play; thence across the "Continental Divide" by the Hoosier, Hamilton, or other pass to the Valley of the Blue; thence by such route as may be found most eligible with a view of developing the mineral and agricultural wealth of Western Colorado, to the western border of Colorado; and thence, by the most eligible route to Salt Lake City, with a branch from said railway, at or near the intersection of the Salt Branch with the South Platte, to the salt works.

4. THE WESTERN COLORADO RAILWAY.

Commencing at a point on said Denver and Rio Grande Railway at or near the mouth of the South Arkansas River; thence up the Valley of the main Arkansas to the summit of the range dividing the waters of the Arkansas and the Grande River of the West; thence by the Valley of the Grande, or such other tributary of the Great Colorado River as may be found most practicable and eligible, with a view of developing the mineral and agricultural wealth of Western Colorado, to a point on the western border of Colorado, and thence by the most eligible route to Salt Lake City.

5. THE MORENO VALLEY RAILWAY.

Commencing at a point on said Denver and Rio Grande Railway, at or near the mouth of the Costillo, or such other eastern tributary of the Rio Grande as may be found most eligible, and to extend up said Costillo or most practicable valley to the mines and pineries of the Maxwell estate.

6. THE SAN JUAN RAILWAY.

Commencing at a point on the said Denver and Rio Grande Railway, near or accessible to the Valley of the Chama, or such other western tributary of the Rio Grande as may be found most eligible, and to extend thence, by such most eligible valley, to the divide separating the waters of the Great Colorado from the Rio Grande, and thence to such point in the San Juan Valley as may be most expedient.

7. THE GALLISTEO RAILWAY.

Commencing at a point on the said Denver and Rio Grande Railway in New Mexico between Santa Domingo and San Felipe, and extending thence by the most eligible route to the gold mines and anthracite coal fields of the Placer Mountains.

8. THE SANTA RITA RAILWAY.

Commencing at the most eligible point on the said Denver and Rio Grande Railway, in Southern New Mexico, between Fort Craig and El Paso, and extending thence in a general westerly direction to the mines of Pinos Altos and Santa Rita, and to the silver mines of the Burro Mountains. It is intended that the telegraph lines mentioned in the certificate shall be appendant and appurtenant to the said railways, and are to be constructed by the said Denver and Rio Grande Railway Company at their option, on and along any or all of the railway routes above specified, or as near thereto as may be expedient. And the termini of the said telegraph lines are to be the same as the termini of the several railways above mentioned, and along which the said telegraph lines, or any of them, may be built. And the said railways and the said telegraph lines are to be built within, or through, and across, and operated in the counties of Arapahoe, Douglass, El Paso, Pueblo, Fremont, Lake, Saguache, Summit, Park, Jefferson, Las Animas, Costillo, Conejos, and Huerfano, of Colorado, and in such counties of New Mexico as the route herein described may pass through.

3. The capital stock of said company shall be two and one-half million dollars, to be divided into twenty-five thousand shares, at one hundred dollars per share.

4. The term of the corporate existence of said company shall be fifty years from the filing of this certificate.

5. The number of the trustees of said company shall be five: and William T. Mellen of New York, R. Henry Lamborn of Philadelphia, Alexander C. Hunt of Denver, William J. Palmer of Colorado, Howard Schuyler of Colorado, are hereby designated as trustees to manage the concerns of said company for the first year of its existence.

6. That the principal office of said company shall be in the city of Denver, unless legally changed to some other place; and the operations of said company shall be in the several counties and upon the route above mentioned.

7. The trustees shall have power to make such by-laws as they may deem proper for the management and disposition of the stock and affairs of the company.

In witness whereof we have hereunto set our hands and seals:

[SEAL.] WM. J. PALMER.
[SEAL.] ALEX. C. HUNT.
[SEAL.] WM. H. GREENWOOD.

TERRITORY OF COLORADO, } *ss.*
COUNTY OF ARAPAHOE. }

I, William H. Townsend, a notary public in and for said county, in the territory aforesaid, do hereby certify that William J. Palmer, Alexander C. Hunt, and William H. Greenwood, who are personally known to me as the parties whose names are subscribed to the foregoing or annexed certificate of incorporation, as parties thereto, and as having executed the same, appeared before me this day in person, and acknowledged that they signed the said instrument of writing for the uses and purposes therein set forth.

In testimony whereof I have hereunto set my hand and affixed my notarial seal this 27th day of October, A.D. 1870.

WILLIAM H. TOWNSEND,
[SEAL.] *Notary Public.*

TERRITORY OF COLORADO, } *ss.*
EXECUTIVE DEPARTMENT. }

I, Frank Hall, Secretary of the Territory of Colorado, do hereby certify that the foregoing is a correct transcript of the certificate of incorporation of the Denver and Rio Grande Railway Company which was filed in my office the 27th day of October, A.D. 1870, at 4 o'clock P.M., and recorded in Book D, page

In testimony whereof I have hereunto set my hand, and caused the great seal of the Territory to be affixed, this 29th day of October, A.D. 1870.

FRANK HALL,
[SEAL.] *Secretary of Colorado Territory,*
Per W. H. TOWNSEND,
Assistant.

AN ACT

Amendatory of An Act approved March 2, 1867, entitled "An Act amendatory of An Act to provide a temporary government for the Territory of Montana," approved May 26, 1864.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the first section of an act approved March 2, 1867, entitled, "An Act amendatory of 'An Act to provide a temporary government for the Territory of Montana,' approved May 26, 1864," so far as relates to incorporations which have been, or which may hereafter be created and organized for the business of mining, manufacturing, or other industrial pursuits, or the construction or operation of railroads, wagon-roads, irrigating ditches, and the colonization and improvement of lands in connection therewith, or for colleges, seminaries, churches, libraries, or any benevolent, charitable or scientific association, and for all rightful subjects of legislation consistent with the Constitution of the United States, under the general incorporation laws of any Territory of the United States, shall be construed as having authorized, and as authorizing the legislative assemblies of the Territories of the United States, by general incorporation acts, to permit persons to associate together as bodies corporate for purposes above named.

AN ACT

Granting the Right of Way through the Public Lands to the Denver and Rio Grande Railway Company.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the right of way over the public domain, one hundred feet in width on each side of the track, together with such public lands adjacent thereto as may be needed for depots, shops, and other buildings for railroad purposes and for yard room, and side tracks, not exceeding twenty acres at any one station, and not more than one station in every ten miles; and the right to take from the public lands adjacent thereto, stone, timber, earth, water, and other material required for the construction and repair of its railway and telegraph line, be, and the same are hereby granted and confirmed unto the Denver and Rio Grande Railway Company, a corporation created under the incorporation laws of the Territory of Colorado, its successors and assigns, and all the rights, powers, and franchises conferred by the said laws on corporations created under them for constructing and operating railroad and telegraph lines are hereby ratified and confirmed to the above-named railway company, its successors and assigns, and the same rights, powers, and franchises conferred by the general incorporation laws of the Territory of Colorado for the construction of railroads and telegraph lines are hereby granted to the said company, its successors and assigns, for the extension and operation of its railway and telegraph lines in and through any contiguous territory of the United States, to the northern boundary line of Mexico, subject to the compliance with the conditions and requirements of the general incorporation laws of such territory, so far as the same are applicable and not inconsistent with the laws of the United States; and the same rights, powers, and privileges conferred upon the Union Pacific Railroad Company, by section three of an act approved July second, eighteen hundred and sixty-four, are hereby conferred upon the above-named company, its successors and assigns. *Provided*, that application for the assessments of damages shall be made to the court or any judge of a court having jurisdiction in the county in which the lands or premises lie. *Provided*, that said company shall complete its railway to a point on the Rio Grande as far south as Santa Fé, within five years of the passing of this act, and shall complete fifty miles additional south of said point in each year thereafter; and in default thereof, the rights and privileges herein granted shall be rendered null and void, as far as respects the unfinished portion of said road. *And provided further*, that the said Denver and Rio Grande Railway Company is hereby recognized as a lawful corporation from the date of its incorporation under the laws of Colorado, and all the powers, privileges, and franchises by said laws conferred upon said company are hereby expressly ratified, confirmed, and legalized as existing from the said date of incorporation; but beyond such recognition, ratification, and confirmation of and to said company, this act shall not be construed as affirming or denying the rights of territories to pass laws for the incorporation of railway companies.

4

DISCRIMINATION BY RAILROADS.

ADDRESS

—BY—

HON ROBERT E. PATTISON,

GOVERNOR OF PENNSYLVANIA,

BEFORE THE

Farmers' Institute and General Farmers' Convention,

HELD AT

LOCK HAVEN, CLINTON COUNTY, PA.,

JANUARY 21ST, 1886.

HARRISBURG:
EDWIN K. MEYERS, PRINTER AND BINDER.
1886.

C
CALIFORNIA STATE LIBRARY

DISCRIMINATION BY RAILROADS.

PROCEEDINGS

OF THE

FARMERS' INSTITUTE AND GENERAL FARMERS' CONVENTION,

Lock Haven, Clinton County, Penn'a,

JANUARY 21, 1886.

Governor ROBERT E. PATTISON, being introduced, said :—

The most important economic question presenting itself for decision to-day is the prevention of discrimination by common carriers. It is by no means a new question, and it is more prominent now than at any past period, simply because its evils, with the growth of years, have increased so enormously that they can no longer be hidden or denied. But anti-discrimination is the most important economic problem of the day, for the reason that its evils are the most wide-spread, and afflict the masses of citizens least able to bear or resist its injury, namely, the consuming and small-producing class. In this latter, I include farmers, the most numerous body of producers in the country. Another and a principal reason why this question ranks as the first demanding solution is, that it has been and is the parent of a long line of evils that, but for it, would hardly be possible. The immediate wrong of railroad discrimination is as nothing compared with the social business and industrial inequalities it has created and fostered. Itself a result of monopoly, it has, by a natural inevitable law, engendered monopoly. Indeed, discrimination might, with perfect accuracy, be defined as the unlawful act of a monopoly, whereby it creates and protects other monopolies. Or, by analogy, it might, with equal truth, be termed a railroad tariff protection—an act of discrimination by which one producer is charged a greater rate of freight than another, in order that he cannot sell cheaper than the other, (as, if they were on a perfect equality, he might,) is the principle of tariff protection carried into freight charges—with this difference, that, in one instance, the discrimination is by the Government and against an alien, and in the other by private, selfish, and irresponsible speculators, and against a citizen entitled by law to equal treatment with every other citizen. Discrimination benefits the few at the expense of the many; it enriches organized capital and large producers to the impoverishment of private capital and small producers; it fosters corporate speculation to the destruction of individual enterprise; it builds up great fortunes in a few, and reduces to the ranks of dependent laborers masses of men that would otherwise enjoy the fruits of their industry in enterprises of their own. One need not travel outside of Pennsylvania to find illustrations for all these evils. Pennsylvania has been an especial sufferer from all these injuries. Railroad discrimination built up and established the Standard Oil monopoly, by which a source of natural wealth, illimitable and marvellous, was entirely deflected from our State. Thousands of citizens were bankrupted, and individual enterprise was driven from the oil regions. But for discrimination, the Standard Oil Company would not be in existence to-day. We shall estimate the wide-spread evil this single creature of discrimination has caused. Not alone has it taken the oil industry from Pennsylvania and private enterprise, but it has taxed the consumers of the country for its benefit, has debauched Legislatures, has corrupted the avenues of justice, has mocked the law, and is stretching out its arms in every direction to monopolize other sources of wealth and means of supply. Discrimination has made Philadelphia, at one time the first commercial city in the Union, and still with the highest manufacturing resources, little more than a mere annex to New York. Those great beds of anthracite coal which seem to have been reserved by nature to make Philadelphia one of the chief industrial and manufacturing marts of the world, have, through discrimination, been made to burden her citizens and retard her development. Discrimination has built up here and there, throughout the State and country, along the lines of railroads, populous towns that are the seats of enormous iron, steel, and other works, that have enriched their owners and interested railroad officials, but have peopled those cities with a mass of dependent laborers who live from hand to mouth, who are thrown out of work at the will of their employers, and who can hope for nothing but the merest necessaries of life in their existing social condition. Railroad discrimination has given to the New Republic a line of princely railroad nabobs and lords of the soil, with fortunes that out-rank royalty, and domains of virgin soil that exceed in area a German State. But it has given us, too, in little more than a generation, a mass of restless and discontented laborers, often eating the bread of idleness, and clamoring for concessions from a few great employers. It has reduced the owners of farms in number until they are a million less than the tenant farmers, and everywhere it has tended to centralize wealth and increase the ranks of dependent labor. It may be said that many of these evils resulted from other causes than discrimination, and that it alone should not be charged with faults that are the outgrowth of many causes. This, however, is taking but a superficial view of the subject. My position is that had railroad corporations acted

ERRATA.

On page 2 in line 14 from top, read "Who" for "We."
On page 3 in line 8 from bottom, read "finesse" for "fitness."
On page 4 in line 2 from top, read "greater" for "great or."

nation is an evil. That it is, is admitted by every one but those who profit by it. The question is as to what is its proper remedy. The number of those who defend or excuse it is so small as to be unworthy of consideration. The times are ripe for redress and correction. But what will work the redress—what will correct the evil? There are those who say that the true remedy is more railroads. Competition, they say, will put a stop to monopoly: therefore, give us more railroads. This argument, applied to railroad injustice, has recently, in the State, been put to a severe test. In the hope that by the application of this doctrine Pennsylvania might get some relief from the monopoly of her great trunk line and its continued injustice, I was induced, in 1883, to sign the bills which made possible the construction of the South Pennsylvania railroad, which, it was said, would give our citizens another western and seaboard outlet. A partial result of the experiment is known to the world to-day. The people of our southern tier of counties particularly have learned a bitter disappointment—the hollowness of the promises of organized capital to redress the wrongs of another organized capital. The South Pennsylvania railroad is, to-day, claimed as the property of the corporation of which it was projected to be the rival. Against law and justice, in the face of plighted faith and popular protest, an effort was made to sell it out,—to strengthen and establish the power for evil of the vast corporation that had so far proved itself stronger than courts or Executives, Constitutions or the people. It will soon be ascertained whether its lawless supremacy is to be perpetual. The opinions of the Dauphin county court, recently filed in the railroad cases, are full of encouragement to the people if they do but appreciate them. They strengthen greatly the efforts of those who are laboring for the supremacy and enforcement of the Constitution. They are robust and masculine in tone and in the treatment of the great subject to which they relate. They are singularly free from the fitness of mere lawyer minds, and are wonderfully strong, because of their frankness, simplicity, and directness. The failure thus far, however, of that attempt to correct railroad discrimination, by the erection of another road, has gone far to prove the hopelessness of the people ever deriving any relief from such means. It has proven that corporate capital is everywhere alike, animated by the same purposes, controlled by the same influences.

Though corporations may, for a time and for selfish purposes,

and
sma
of i
red
wor
thei
illus
suff

and established the Standard Oil monopoly, by which a source of natural wealth, illimitable and marvellous, was entirely deflected from our State. Thousands of citizens were bankrupted, and individual enterprise was driven from the oil regions. But for discrimination, the Standard Oil Company would not be in existence to-day. We shall estimate the wide-spread evil this single creature of discrimination has caused. Not alone has it taken the oil industry from Pennsylvania and private enterprise, but it has taxed the consumers of the country for its benefit, has debauched Legislatures, has corrupted the avenues of justice, has mocked the law, and is stretching out its arms in every direction to monopolize other sources of wealth and means of supply. Discrimination has made Philadelphia, at one time the first commercial city in the Union, and still with the highest manufacturing resources, little more than a mere annex to New York. Those great beds of anthracite coal which seem to have been reserved by nature to make Philadelphia one of the chief industrial and manufacturing marts of the world, have, through discrimination, been made to burden her citizens and retard her development. Discrimination has built up here and there, throughout the State and country, along the lines of railroads, populous towns that are the seats of enormous iron, steel, and other works, that have enriched their owners and interested railroad officials, but have peopled those cities with a mass of dependent laborers who live from hand to mouth, who are thrown out of work at the will of their employers, and who can hope for nothing but the merest necessaries of life in their existing social condition. Railroad discrimination has given to the New Republic a line of princely railroad nabobs and lords of the soil, with fortunes that out-rank royalty, and domains of virgin soil that exceed in area a German State. But it has given us, too, in little more than a generation, a mass of restless and discontented laborers, often eating the bread of idleness, and clamoring for concessions from a few great employers. It has reduced the owners of farms in number until they are a million less than the tenant farmers, and everywhere it has tended to centralize wealth and increase the ranks of dependent labor. It may be said that many of these evils resulted from other causes than discrimination, and that it alone should not be charged with faults that are the outgrowth of many causes. This, however, is taking but a superficial view of the subject. My position is that had railroad corporations acted as the just public trustees, which in law they are, and not as private enterprises managed by selfish speculators—had they used their franchises fairly, justly, and impartially—had they confined themselves to their duties as common carriers—had they obeyed the laws and not corrupted Legislatures, judges, and Executives to enable them to defy the laws—the greater part of the evils that I have enumerated would not now exist.

It is unnecessary, however, at this day, to prove that discrimination is an evil. That it is, is admitted by every one but those who profit by it. The question is as to what is its proper remedy. The number of those who defend or excuse it is so small as to be unworthy of consideration. The times are ripe for redress and correction. But what will work the redress—what will correct the evil? There are those who say that the true remedy is more railroads. Competition, they say, will put a stop to monopoly; therefore, give us more railroads. This argument, applied to railroad injustice, has recently, in the State, been put to a severe test. In the hope that by the application of this doctrine Pennsylvania might get some relief from the monopoly of her great trunk line and its continued injustice, I was induced, in 1883, to sign the bills which made possible the construction of the South Pennsylvania railroad, which, it was said, would give our citizens another western and seaboard outlet. A partial result of the experiment is known to the world to-day. The people of our southern tier of counties particularly have learned a bitter disappointment—the hollowness of the promises of organized capital to redress the wrongs of another organized capital. The South Pennsylvania railroad is, to-day, claimed as the property of the corporation of which it was projected to be the rival. Against law and justice, in the face of plighted faith and popular protest, an effort was made to sell it out,—to strengthen and establish the power for evil of the vast corporation that had so far proved itself stronger than courts or Executives, Constitutions or the people. It will soon be ascertained whether its lawless supremacy is to be perpetual. The opinions of the Dauphin county court, recently filed in the railroad cases, are full of encouragement to the people if they do but appreciate them. They strengthen greatly the efforts of those who are laboring for the supremacy and enforcement of the Constitution. They are robust and masculine in tone and in the treatment of the great subject to which they relate. They are singularly free from the fitness of mere lawyer minds, and are wonderfully strong, because of their frankness, simplicity, and directness. The failure thus far, however, of that attempt to correct railroad discrimination, by the erection of another road, has gone far to prove the hopelessness of the people ever deriving any relief from such means. It has proven that corporate capital is everywhere alike, animated by the same purposes, controlled by the same influences.

Though corporations may, for a time and for selfish purposes, resist the iniquities of each other, it is only for so long as it is necessary to strengthen each other for great or public wrongs; and then they make common cause, and join hands against the people. "Set a thief to catch a thief" does not apply to corporations. You only set loose two thieves instead of one to prey upon the public. I am convinced, after long reflection, that there is only one sure remedy left for the people of Pennsylvania, and that is to enforce the existing laws of the State by penal statutes. It must be made a crime, punishable by the imprisonment of the officials, for railroad officials to break the law. Since all other efforts have failed, I am now for trying the efficacy of the prison law. And why not? You would punish a county official who stole your taxes, by putting him in prison. You would send to the penitentiary the private trustee who corruptly profited by his trust. And why shall not the public trustees of railroad corporations be jailed for robbing the citizen and oppressing the community corruptly? There is no trouble at all about the laws so far as they declare the rights and duties of the people and the railroads. The seventeenth article of the Constitution needs no addition or amendment. It is sufficient in all its parts to correct every evil of railroads from which the people now suffer, if it be enforced. It is just, true, lawful. It is legally and equitably sound in every member. It simply needs honest legislators to pass the laws to enforce it and pure judges to interpret those laws. Let the next Legislature pass a statute simply making it a penal offense, punishable by imprisonment, to violate the provisions of the seventeenth article, and let a jury of honest men pass upon the fact whether that article has been violated under the instruction of unsubsidized judges, and from that day we will have law-obedient railroad corporations in Pennsylvania. It is useless to listen to the sophistry of paid railroad attorneys, either in the Legislature or out of it, about the difficulty of drafting a penal statute based upon the seventeenth article. There is scarcely a section of that article that is not sufficiently descriptive for a penal statute. Leave it to a jury to say whether the South Pennsylvania and the Pennsylvania railroad were parallel and competing lines, and twelve honest men would convict the conspiritors who concocted the "sell out," without leaving the box, and an upright judge would send them to the penitentiary before the court adjourned. What difficulty is there about a jury finding whether a pass given to a legislator or a judge, and for which he gives no tangible return, is a free pass or not? Where is the trouble about a jury finding whether mining coal is the business of common carrying? And so of all the sections of the seventeenth article. Merely attach the penal clause to each of them, and leave the rest to a jury and an honest court. At least let us try this just for a while. Honest men, honest railroad officials, would not fear such laws: and as for dishonest ones, we simply want that there shall be some laws they will fear.

THE
ATLANTIC & PACIFIC
SHIP-RAILWAY

ACROSS THE

ISTHMUS OF TEHUANTEPEC,

IN MEXICO.

Considered Commercially, Politically & Constructively.

BY

ELMER L. CORTHELL,

Chief Engineer.

* * *

JANUARY, 1886.

CALIFORNIA STATE LIBRARY

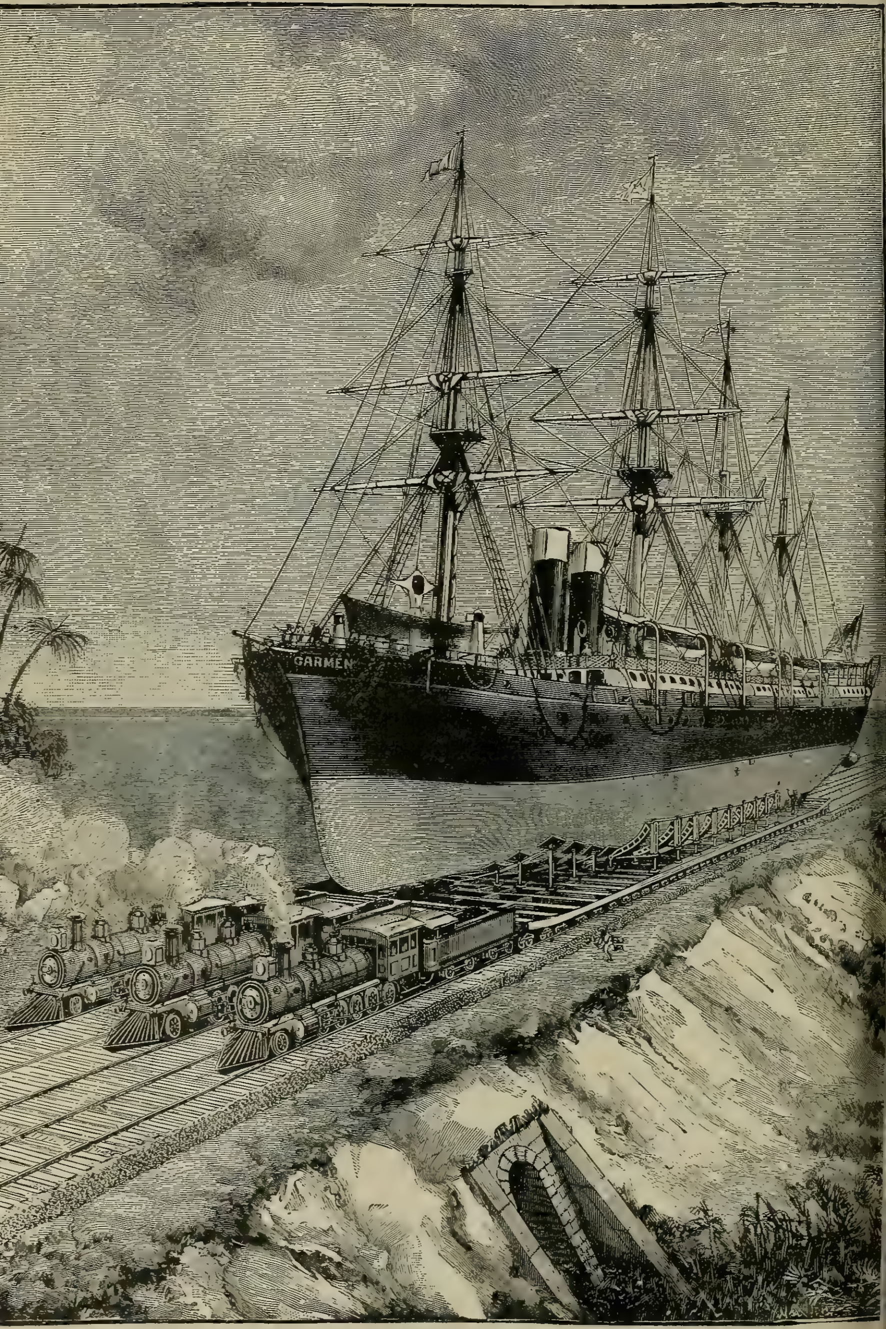


Plate I.—A Steamer in Transit.

THE

ATLANTIC & PACIFIC

SHIP-RAILWAY

ACROSS THE

ISTHMUS OF TEHUANTEPEC,

IN MEXICO,

Considered Commercially, Politically & Constructively.

BY

ELMER L. CORTHELL,

Chief Engineer.

JANUARY, 1886.

33575

BOWNE & CO., PRINTERS,
124 Pearl Street, N. Y.

CONTENTS.

CHAPTER I.

PAGE.

The constant and undiminished Importance of the East during the last three thousand years, as the Source of the Wealth and Trade of the World 3

CHAPTER II.

Opinion of American Statesmen during the last sixty years upon the vast importance to this country of an Interoceanic Communication, and upon the Necessity, Right and Policy of the United States to encourage and protect any Isthmian Crossing between the two Oceans 8

CHAPTER III.

Commercial and Industrial Facts showing the paramount importance of an Isthmian Crossing and its Imperative Necessity.............. 17

CHAPTER IV.

Superior Advantages of the Tehuantepec Isthmus—Commercial, Climatic, Constructive and Strategic 23

CHAPTER V.

The Ship-Railway, its Plans, Practicability and Economy.............. 33

CHAPTER VI.

Distances saved.—Tonnage expected.—Government Status of the Enterprise.—Benefits to the United States and Mexico during the Construction.—General Results 63

CHAPTER VII.

Reports of Congressional Committees approving the Ship-Railway route and method, and urging Government Assistance.................. 70

PLATES.

I. A Steamer in Transit.............. .... Frontispiece.

II. Map showing Tehuantepec to be the great Central Barrier to the World's Commerce.. 22

III. Perspective View of the Dock and Car...................... .. 36

IV. Details of the Lifting Dock.................................. 39

V. Details of the Car... 41

VI. Perspective View of the Floating Turntable...... 45

VII. Details of the Floating Turntable...... 47

PREFACE.

THE purpose of the Author in the following pages is to present, in a concise yet comprehensive form, the commercial and political reasons for an interoceanic communication between the Atlantic and Pacific at the Isthmus of Tehuantepec in Mexico ; also to bring together the more important facts that prove the practicability and the economy of a Ship-Railway. The previous discussions, while complete in detail, have been partial and fragmentary. The writer has had exceptional advantages in investigating this subject ; he made examinations on the Isthmus and the surveys of its harbors in 1880, and has since that time conducted, through very efficient and experienced engineers, complete topographical surveys of the Isthmus, on which the plans, profiles and estimates are based.

THE

ATLANTIC AND PACIFIC

SHIP-RAILWAY.

CHAPTER I.*

HISTORICAL.

"THE problem of interoceanic transit across the American "continent has been said to 'possess not only practical value but "historic grandeur'. Its partial solution is being attained by the "construction of those railways which are bringing nearer to us "so much of the eastern world; but it can be fully solved only "when such a work has been made as will prove a maritime highway "for America and Europe to the western shores of the continent, "to the new world of Australia and its surroundings, to Eastern "Asia, and to Japan. To meet the requirements which commerce, "supported by all the advanced appliances of this day, imperatively "demands, the transit must offer the allurements of a full, "uninterupted, safe, and speedy transportation. * * *

"History invests the problem with an interest surpassing that of "its usual records. In this effort to secure a western route to Asia "and the Spice Islands it is linked back to the age of the great "discoverer; and since the object held by Columbus for his "sovereigns was the same with that of the ages preceding, the "problem thus reaches back to the story of the coveted wealth "of Asia and of the old highways to it.

"India and China! what tales of marvelous endeavor to secure "their riches remain on the pages of authentic history! Both "countries, from time immemorial, famed for the richness and "variety of products secured by the caravan which sought them by "weary routes from the west. These were the storehouses of "product and luxury, drawn upon more and more as the facilities "of commerce and land travel enlarged themselves, yet ever, as "to-day, without sensible decrease. The labors of the Old World "were to reach them by an eastern route; the labor of the New

---

* The quotations in the first part of this chapter are from the pen of Professor J. E. Nourse, U. S. N.

"World is to reach them by the west. Through the whole period "of history, ancient and modern, it is the same drawing upon the "resources of the east. It was their traditional inexhaustibility that "stimulated the progress of discovery in the Middle Ages, opened "up the New World itself, and has left for our day the problem of "the new transit. It has been reserved for our age, however, to "crown the motives of the past with the higher purpose of extending "over the east the highest types of civilization and Christian "enlightenment, hopefully to be conferred upon it by thus advancing "the closer intercourse and fellowship of men.

"The student of commercial history is instructed that during the "last 3000 years the steady tendency of commercial enterprise has "been toward the west, and that 'civilization has followed the sun "in its course.' The steps of that progressive tendency are links in "the earlier history of our problem. * * *

"To look through the chapters of ancient history, is to recall "without difficulty the fact that each of the great empires of "antiquity owed its supremacy to the conquests of commerce as "well as war. * * * As a single instance of "the richness of that commerce, it may be remembered that from "one voyage the fleets of Solomon brought back gold equal in value "to nearly fourteen and a-half millions of dollars. * * *

"In the days of Augustus the amount of the precious metals sent "to India to pay for products for which there was no corresponding "exchange by the produce of the west, was estimated at 100,000,000 "sesterces, or $40,000,000. The consignments which reached "Alexandria from the east were directed to every port in the "Mediterranean. * * *

"Before the awakening of Europe from the sleep of 'the dark "ages', the Italians by their intercourse with Constantinople and the "other cities of the Greeks having obtained a knowledge of the east "and cultivated a taste for its precious commodities, were not slow "to embrace and develop direct intercourse with India, and, in the "course of the twelfth century, Venice established a regular trade "through the ports of Egypt, which she maintained for four "centuries.

"The marvelous ascendency which the Mistress of the Isles thus "acquired, aroused and stimulated the next great commercial "enterprise of the world's history. The Portuguese, who for "generations had sought to discover the realms of gold, in 1498 "established a maritime ascendency which extended over the coasts "of Africa and Asia, from Mozambique to Japan; whilst their "famous cities of Goa, Malacca, and Macao became emporiums of "trade with India and China, which had previously enriched "Venice and Genoa.

"From that date, eastern commerce, falling successively into the "hands of the Dutch and the English, has at length assumed "proportions which bear no comparison with those of the earlier "ages. A new title has been jeweled into the crown of England "while the great highway, the realized dream of ages, is freighted "daily from the same storehouses of the east, enriching not only "Europe but the shores on our side of the globe.

"The first bold crossing of 'the sea of darkness' links the "commercial activities of the Old World with the New in the person "of the great discoverer. The expectation of being able to sail "westward to the Spice Islands without interruption was the "principal motive of Columbus in undertaking the voyage which "first marked the limits of the Atlantic.

* * *

"The chief object of his last voyage indicates, in a marked degree, "his idea of Asia, since it was undertaken with the single purpose of "seeking along the coast of the Caribbean sea the Strait which he "imagined formed a communication between his discoveries and "India.

* * *

"'He had been in pursuit of a chimera of a splendid imagination "'and a penetrating judgment. If he was disappointed in his "'expectations of finding a strait through the Isthmus of Darien, it "'was because nature herself was disappointed. For she appears "'to have attempted to make one, but to have attempted in vain.' *

' This search for the secret of the strait marks the first era in the "history of direct efforts for interoceanic communication across "America. From this date it is a record of continuous and "unavailing effort to find the strait, and on a failure of this, a "record of numberless canal and railroad projects for an artificial "transit.

* * *

"The discovery of the Pacific by Balboa, and its entrance by "Magellan, kept alive for more than a quarter of a century the "erroneous ideas of the strait. Since it was now certain that the "new lands were not the Indies, the next thing was to carry forward "the search for the narrow passage which must lead to them. "The very configuration of the Isthmus strengthened the belief in "the existence of such a passage by the number of its openings, "which seem to invite entrance in the expectancy that some of them

---

* Washington Irving.

"must extend across the narrow breadth of land. For this great "purpose, and in full expectancy of success, the whole coast of the "New World on each side, from Newfoundland, as visited by the "Cabots, on the northeast, and thence south around the whole "sweep of the Mexican Gulf, and the Caribbean Sea, around South "America, and up the Pacific to Behring Straits, was searched and "researched with diligence. Men, says Humboldt, could not "accustom themselves tc the idea that the continent extended "uninterruptedly from such high southern to such high northern "latitudes. * * *

"The continuous search for the strait, made under the orders and "direct superintendence of Cortez, at length resulted in putting an "end to all hope in that direction. Charles V. had urged the search. "In a letter from Valladolid, in 1533, he enjoined the most careful "inquiry 'for the passage which would connect the eastern and "western shores of the New World, and shorten by two-thirds the "route from Cadiz to Cathay;' and Cortez, in his reply, expressed "the highest hopes of success. 'It would render the King of Spain "master of so many kingdoms that he might call himself Lord of the "World'. The instructions of the court and the subsequent letters "of the conquerer, as well as the correspondence of men of science, "were always full of the idea. 'For the proximity of the two oceans "in certain parts of the Isthmus having been this time ascertained, "it could not yet be believed that nature had worked on a plan so "apparently repugnant to the interests of humanity as to interpose, "through the whole length of the new continent, such a barrier to "communication between the great seas'. The conqueror of "Mexico never abandoned this leading object in his reverses, nor "forgot it in his triumphs. * * *

"He ascertained that, instead of the outlet before supposed to "exist towards the north, the unknown ocean was locked up in the "arms of the mighty continent. The hope of finding a short passage "across the Isthmus thus perished. * * *

"The Spanish historian, Gomara, seems first to have proposed an "artificial opening through the Isthmus. In 1551, representing, "doubtless, the general feeling in Spain and in the New World, he "urged on Philip II. the union of the oceans by three of the same "routes which at this day are still before the world, Tehuantepec, "Nicaragua and Panama; and had Spain remained what she had "been under Charles V., what had been in vain sought from nature "might have been in some degree supplied by man. Her men of "science had urged the work, and all Spain had awakened to it.

" 'It is true,' said Gomara to the Emperor, 'that mountains " obstruct these passes, but if there are mountains, there are also " hands. Let but the resolve be made, there will be no want of " means; the Indies, to which the passage will be made, will supply " them. To a King of Spain, with the wealth of the Indies at his " command, when the object to be attained is the spice trade, what " is possible is easy.' * * *

" Since the glorious age of Balboa, among the people, indeed, the " project of a canal was in every one's thoughts. In the very wayside " talks, in the inns of Spain, when a traveler from the New World " chanced to pass, after making him tell of the wonders of Lima " and Mexico, of the death of the Inca Atahualpa, and the bloody " defeat of the Aztecs, and after asking his opinion of El Dorado, " the question was always about the two oceans, and what great " thing would happen if they could succeed in joining them."

For nearly three hundred and fifty years, governments, companies and individuals have made surveys and plans, and brought forward projects of canals and railroads to overcome this important obstacle to the commerce of the world. The celebrated Portuguese navigator Altono Galva, in 1550, wrote a treatise on the subject and suggested several different lines for crossing the Isthmus. One of the earliest exploits of Nelson was an attack on the port of San Juan in Nicaragua in 1779, with the purpose of controlling communication between the two oceans. King Charles III. of Spain sent an exploring expedition to the Isthmus under Manuel Galistro in 1780. Humboldt studied the subject on the Isthmus itself, and strongly urged a transit-way. All the Central American Republics, immediately after securing their independence, brought forward projects for inter-oceanic communication. In 1826, the Mexican government ordered the survey of the Tehuantepec Isthmus to be made by Gen. Orbegozo. Several of the Central American republics gave concessions and contracts to individuals and companies of different nations, looking to the construction of canals or railroads. The United States government has sent several expeditions, under charge of naval and army officers and civil engineers, to examine and survey various routes across the Isthmus. Mr. Frederick M. Kelly, a wealthy New York merchant, induced at first by the statements of Humboldt in regard to the feasibility of a canal through Darien, spent a large fortune in explorations of the Isthmus. He not only sent several parties there under prominent engineers, but also appeared before leading men of Europe and their governments, and the government of the United States, asking their assistance in solving this great problem. Some of the most skillful naval officers and army engineers have, under the United States government, made surveys of many parts of the Isthmus.

CHAPTER II.

OPINIONS OF AMERICAN STATESMEN DURING THE LAST SIXTY YEARS UPON THE VAST IMPORTANCE TO THIS COUNTRY OF AN INTEROCEANIC COMMUNICATION, AND UPON THE NECESSITY, RIGHT AND POLICY OF THIS GOVERNMENT TO ENCOURAGE AND PROTECT ANY ISTHMIAN CROSSING BETWEEN THE TWO OCEANS.

In 1826, Henry Clay, Secretary of State, in a letter of instructions to the Commissioners of the United States to the Congress of Panama, said:

"A cut or canal for purposes of navigation somewhere through "the isthmus that connects the two Americas, to unite the Pacific "and Atlantic Oceans will form a proper subject of consideration "by the Congress. That vast subject, if it should ever be accom-"plished, will be interesting in a greater or less degree to all parts of "the world. But to this continent will probably accrue the largest "amount of benefit, from its execution; to Colombia, Mexico, the "Central Republic, Peru, and the United States, more than to any of "the other American nations. What is to redound to all America "should be effected by common means and united resources, and "should not be left to the unassisted efforts of any one power. In "the present limited state of our information as to the practicability "and the probable expense of the object, it would not be wise to "do more than to make some preliminary arrangements. The best "route will be most likely found in the territory of Mexico or that "of the Central Republic. * * *

"You will inquire particularly as to what has been done, or may "have been designed by Spain, or by either of the new States, and "obtain all other information that may be within your reach to solve "this interesting problem. You will state to the ministers of the "other American powers that the Government of the United States "takes a lively interest in the execution of the work and will see with "peculiar satisfaction that it lies within the compass of reasonable "human efforts."

In 1835, President Jackson commissioned Mr. Charles Biddle to go to the Isthmus and study the subject of interoceanic communications. In 1839, the chairman of the Committee on Roads and Canals of the House of Representatives, Mr. C. F. Mercer, presented a report on the subject, urging negotiations for an interoceanic crossing. In the beginning of his report he said :

"It is obvious that if the contemplated communication from sea "to sea be practicable, the nation which has the right to appropriate "its exclusive use to itself might lawfully control the richest com- "merce of the world, or prescribe to all other nations the terms upon "which they be admitted to share its enjoyment. The policy is not "less apparent which should prompt the United States to co-operate "in this enterprise liberally and efficiently. * * * If other con- "siderations did not prompt this decision, it should suffice for its "confirmation to contrast the continuous voyage of the same vessel "across the two oceans, divided by the Isthmus, with the trans-ship- "ment of a heavy cargo between vessels of equal burden, and the "intervening expense of land transportation, double port duties, "and commissions, added to the damage of shifting and exposing "very valuable commodities to waste and depredation. The United "States, whose territory extends from the Atlantic to the Pacific, "cannot but regard with solicitude any eterprise which, if prac- "ticable, will so greatly approximate their eastern and western "frontiers."

In 1847, during the negotiations between the two Republics, which finally resulted in the treaty of Guadalupe Hidalgo of 1848, James Buchanan, then Secretary of State, sent the following instructions to Nicholas P. Trist, the Commissioner of the United States at the City of Mexico : "Instead of fifteen millions of dol- "lars stipulated to be paid by the fifth article for the extension of "our boundary over New Mexico and Upper and Lower Cali- "fornia, you may increase the amount to any sum not exceeding "thirty millions of dollars, payable by instalments of three millions "per annum, provided the right of passage and transit across the "Isthmus of Tehuantepec, secured to the United States by the "eighth article of the project, shall form a part of the treaty."

In 1850, Daniel Webster, while Secretary of State, said in a letter to the United States Minister at Mexico : "The American public at "large has a great and obvious interest in the Tehuantepec pas-

"sage."* In another letter, in 1851, he said: "No one can fail to "see how exceedingly important this communication would be to "the Government of Mexico. It proposes to give her a practical "highway from sea to sea. It opens to her a communication on the "one side and the other with the eastern and western worlds. It "gives her access to the markets of all nations and makes her, in "short, a central point of the commerce of modern times."

In 1851, President Fillmore said, in his message to Congress:

"In negotiating upon this important subject, this Government has "had in view one and only one object. That object has been and "is the construction or attainment of a passage from ocean to ocean, "the shortest and the best for travelers and merchandise, and equally "open to all the world. It has sought to obtain no territorial acquisition nor any advantages peculiar to itself, and it would see with "the greatest regret that Mexico should oppose any obstacle to the "accomplishment of an enterprise which promises so much convenience to the whole commercial world and such eminent advantages "to Mexico herself. Impressed with these sentiments and these convictions the Government will continue to exert all proper efforts "to bring about the necessary arrangement with the Republic of "Mexico for the speedy completion of the work."

That illustrious statesman, Lewis Cass, in an official letter, while Secretary of State, in 1857, said:

"The proximity of the Isthmus" (Tehuantepec) "to our shores, the "salubrity of the climate, the adaptness of the ground for the construction of the railroad, and the great diminution of distance in "comparison with traveled routes between our Atlantic and Pacific "possessions, all conspire to point it out as far preferable to any "other route."

In 1858, he stated the principles on which any interoceanic transit-way must rest as far as this country is concerned, "what the "United States want in Central America, next to the happiness of "its people, is the security and neutrality of the interoceanic routes "which lead through it."

The vast importance of this subject was fully appreciated by that great statesman, William H. Seward, who used the following language in regard to it:

"During the past three hundred years, statesmanship and humani-

---

* Sen. Exec. Doc. 97, Thirty-second Congress, First Session.

"tarianism have combined with ever increasing diligence and effort "to find the means of effecting an enterprise which is, perhaps, the "only one that ever has commanded universal assent and com- "mended itself to the desire of all mankind. Every advance of "modern civilization in Europe, the establishment of every new "nation in America, every opening of any secluded Asiatic state "and nation that has occurred, has increased the zeal and the energy "of the friends of progress in favor of a canal across the American "Isthmus."

President Hayes, in 1880, in a special message to Congress, stated:

"An interoceanic canal across the American Isthmus will essen- "tially change the geographical relations between the Atlantic and "Pacific coasts of the United States, and between the United States "and the rest of the world. It will be the great ocean thoroughfare "between our Atlantic and Pacific shores, and virtually a part of the "coast line of the United States. Our merely commercial interest "in it is greater than that of all other countries, while its relations to "our power and prosperity as a nation, to our means of defense, our "unity, peace and safety, are matters of paramount concern to the "people of the United States."

Ex-Secretary of the Treasury, Hon. Wm. Windom, while a member of the U. S. Senate, said in an address to that body, February 28th, 1881:

"Bordering upon the Gulf on the north lie the great States of "Texas, Louisiana, Mississippi, Alabama and Florida. North of "these lies the mighty empire drained by the Mississippi River, "while to the east are the Atlantic States, stretching from Florida to "Maine. On the Pacific are the States of California, Oregon and "Washington Territory, and from the Atlantic to the Pacific "stretches a domain whose magnificence is the pride of every Amer- "ican. Obstructing, embarrassing and burdening the commerce "between these great sections of the Union, lies this narrow strip of "land. * * * * To avoid it, 1,200,000 tons of wheat raised in "California and Oregon last year were compelled to seek a Euro- "pean market by a costly and tedious voyage of fourteen thousand "miles around Cape Horn. Even the exchange of productions be- "tween our own Atlantic and Pacific States must be made by the "same circuitous, expensive and dangerous route, or else sustain "the heavy burdens imposed for railway transportation across the "continent. The commerce of all the leading nations is in like manner obstructed and burdened. The time has come when this barrier is to be removed. The wonder is that it has been permitted "to remain so long."

The importance to this country of an interoceanic communication was very forcibly presented in a letter to the Minister of the United States at London, May 8th, 1882, by the Secretary of State, Hon. James G. Blaine :

"The possessions of the United States upon the Pacific coast are "imperial in extent and of extraordinary growth. Even at their "present stage of development they would supply the larger part of "the traffic which would seek the advantage of the canal. The "States of California and Oregon, and the Territory of Washington, "larger in area than England and France, produce for export more "than a ton of wheat for each inhabitant, and the entire freights demanding water transportation eastward, already enormous, are "augmenting each year with an accelerating ratio. While the population and products of the Pacific slope are thus increasing upon a "vast scale, the railway system connecting the Gulf of Mexico with "the interior and with the Great Lakes is being rapidly extended, "thus affording additional facilities for enlarging the commerce that "must seek the coast line to the Pacific, of which the projected "canal at Panama will form a part, and be as truly a channel of communication between the Eastern and far Western States as our own "transcontinental railways. It is the perception of this domestic "function of the long-sought water-way between the two seas that "border the Republic, which has caused the project to be regarded "as of vital importance by this government. The history of the "enterprise is marked from the outset by the numerous expeditions "which have from time to time been sent out by the United States "at large expense to explore the various routes, and thus facilitate "the work when the time should be ripe and the vast capital be "forthcoming for the undertaking."

In a message of President Arthur, occurs the following statement on this subject :

"The establishment of water communication between the Atlantic and Pacific Coasts of the Union is a necessity, the accomplishment of which, however, within the territory of the United States "is a physical impossibility. While the enterprise of our citizens "has responded to the duty of creating means of speedy transit by "rail between the two oceans, these great achievements are inade-

"quate to supply a most important requisite of national union and "prosperity. For all maritime purposes, the States upon the Pacific "are more distant from those upon the Atlantic than if separated by "either ocean alone. Europe and Africa are nearer New York, and "Asia is nearer to California than are these two great States to each "other by sea. Weeks of steam voyage, or months under sail, are "consumed in the passage round the Horn with the disadvantage of "traversing tempestuous waters or risking the navigation of the Straits "of Magellan. A nation like ours cannot rest satisfied with such a "separation of its mutually dependent members. We possess an "ocean border of considerably over ten thousand miles on the At-"lantic and Gulf of Mexico, and, including Alaska, of some ten "thousand miles on the Pacific. Within a generation the western "coast has developed into an empire, with a large and rapidly grow-"ing population, with vast but partially developed resources. At "the present rate of increase, the end of the century will see us a "commonwealth of, perhaps, nearly a hundred million inhabitants, "of which the west should have a considerably larger and richer "proportion than now.

* * * *

"From a purely commercial point of view the completion of such "a waterway opens a most favorable prospect for the future of our "country. The nations of the Pacific Coast of South America will "by its means be brought into closer connection with our Gulf "States. The relation of these American countries to the United "States is that of a natural market from which the want of direct "communication has hitherto practically excluded us. By piercing "the Isthmus the heretofore insuperable obstacles of time, sea, and "distance disappear, and our vessels and productions will enter upon "the world's competitive field with a decided advantage of which "they will avail themselves. When to this is joined the large coast-"ing trade between the Atlantic and Pacific States, which must "necessarily spring up, it is evident that this canal affords even "alone an efficient means of restoring our flag to its former place on "the seas. Such a domestic coasting trade would arise immediately, "for even the fishing vessels of both seaboards which now lie idle in "the winter months, could then profitably carry goods between the "eastern and western States.

"The political effect of the canal will be to unite closer the States "now depending upon railway corporations for all commercial and "personal intercourse, and it will not only cheapen the cost of trans-"portation, but will free individuals from the possibility of unjust "discrimination. It will bring European grain markets of demand "within easy distance of our Pacific, and will give to the manufac-"turers on the Atlantic seaboard economical access to the cities of "China, thus breaking down the barrier which separates the princi-"pal manufacturing centres of the United States from the markets "of the vast population of Asia, and placing the Eastern States of "the Union for all purposes of trade midway between Europe and "Asia. In point of time the gain for sailing vessels would be great, "amounting, from New York to San Francisco, to a saving of "seventy-five days ; to Hong Kong of twenty-seven days ; to Shang-"hai of thirty-four days, and to Callao of fifty-two days."

An examination of the documents in the archives of the United States Government will show that it has not only been the unanimous policy of our greatest statesmen, but the earnest and deep-seated sentiment of our people, that European countries should not colonize any part of North or South America, and should not exclusively control the Isthmian crossing, whether it be by railroad, canal or ship-railway. The occupation of the Panama Isthmus by an armed force last spring was made by the United States in virtue of a treaty concluded with New Granada (now the United States of Colombia,) in 1848. The express object of this treaty was to enable the United States, and not an European power, to protect the Panama Railway. The explicit wording of Article XXXV. of this treaty shows how important the subject was considered then, especially when it is remembered that our Government has uniformly and strictly adhered to the policy of non-interference in the affairs of other countries. It is as follows :

"And in order to secure to themselves the tranquil and constant "enjoyment of these advantages, and as an especial compensation "for the said advantages, and for the favors which they have "acquired by Articles IV., V. and VI., of this treaty, the United "States guarantee positively and efficaciously to New Granada, by "the present stipulation, the perfect neutrality of the before named "isthmus, with the view that the free transit from one to the other "sea may not be interrupted or embarrassed in any future time "while this treaty exists."

The only way to reduce to a minimum the danger of European complication on the American isthmus is for this Government to unite with Mexico in the encouragement and protection of an isthmian route at Tehuantepec.

It is not a sentiment only but a deep-seated policy established by treaty precedent and the declaration of American statesmen of all parties, that any isthmian crossing between the Atlantic and Pacific shall be absolutely neutral and safe from interference ; the transit-way to be held inviolate for the benefit of the commerce of all nations.

The great importance of an interoceanic communication, the advantages of the Tehuantepec Route, the established practicability of the Ship-Railway and the broad and statesmanlike policy to be followed by his administration, are clearly expressed by President Cleveland in his Message to the Congress of the United States, Dec. 8th, 1885, as follows :—

"The interest of the United States in a practicable transit for ships across the strip of land separating the Atlantic from the Pacific has been repeatedly manifested during the last half century.

"My immediate predecessor caused to be negotiated with Nicaragua a treaty for the construction, by and at the sole cost of the United States, of a canal through Nicaraguan territory, and laid it before the Senate. Pending the action of that body thereon, I withdrew the treaty for re-examination. Attentive consideration of its provisions leads me to withhold it from re-submission to the Senate.

"Maintaining, as I do, the tenets of a line of precedents from Washington's day, which proscribe entangling alliances with foreign States, I do not favor a policy of acquisition of new and distant territory or the incorporation of remote interests with our own.

"The laws of progress are vital and organic, and we must be conscious of that irresistible tide of commercial expansion which, as the concomitant of our active civilization, day by day, is being urged onward by those increasing facilities of production, transportation and communication to which steam and electricity have given birth ; but our duty in the present instructs us to address ourselves mainly to the development of the vast resources of the great area committed to our charge, and to the cultivation of the arts of peace within our own borders, though jealously alert in preventing the American hemisphere from being involved in the political problems and complications of distant governments. Therefore, I am unable to recommend propositions involving paramount privileges of ownership or right outside of our own territory, when coupled with absolute and unlimited engagements to defend the territorial integrity of the State where such interests lie. While the general project of connecting the two oceans by means of a canal is to be encouraged, I am of opinion, that any scheme to that end to be considered with favor should be free from the features alluded to.

"The Tehuantepec route is declared, by engineers of the highest repute and by competent scientists, to afford an entirely practicable transit for vessels and cargoes, by means of a ship-railway, from the Atlantic to the Pacific. The obvious advantages of such a route, if feasible, over others more remote from the axial lines of traffic between Europe and the Pacific, and, particularly, between the valley of the Mississippi and the western coast of North and South America, are deserving of consideration.

"Whatever highway may be constructed across the barrier dividing the two greatest maritime areas of the world must be for the world's benefit, a trust for mankind, to be removed from the chance of domination by any single Power, nor become a point of invitation for hostilities or a prize for warlike ambition. An engagement combining the construction, ownership and operation of such a work by this Government with an offensive and defensive alliance for its protection, with the foreign State whose responsibilities and rights we would share, is, in my judgment, inconsistent with such dedication to universal and neutral use, and would, moreover, entail measures for its realization beyond the scope of our National polity or present means.

"The lapse of years has abundantly confirmed the wisdom and foresight of those earlier Administrations which, long before the conditions of maritime intercourse were changed and enlarged by the progress of the age, proclaimed the vital need of interoceanic transit across the American Isthmus and consecrated it in advance to the common use of mankind by their positive declarations and through the formal obligation of treaties. Toward such realization the efforts of my Administration will be applied. ever bearing in mind the principles on which it must rest, and which were declared in no uncertain tones by Mr. Cass, who, while Secretary of State, in 1858, announced that 'What the United States want in Central America, next to the happiness of its people, is the security and the neutrality of the interoceanic routes which lead through it.'

"The construction of three transcontinental lines of railway all in successful operation, wholly within our territory and uniting the Atlantic and the Pacific oceans, has been accompanied by results of a most interesting and impressive nature, and has created new conditions, not in the routes of commerce only, but in political geography, which powerfully affect our relations toward, and necessarily increase our interests in any trans-isthmian route which may be opened and employed for the ends of peace and traffic, or, in other contingencies, for uses inimical to both. Transportation is a factor in the cost of commodities scarcely second to that of their production, and weighs as heavily upon the consumer. Our experience already has proven the great importance of having the competition between land carriage and water carriage fully developed, each acting as a protection to the public against the tendencies to monopoly which is inherent in the consolidation of wealth and power in the hands of vast corporations. These suggestions may serve to emphasize what I have already said on the score of the necessity of a neutralization of any interoceanic transit; and this can only be accomplished by making the uses of the route open to all nations and subject to the ambitions and warlike necessities of none."

CHAPTER III.

COMMERCIAL AND INDUSTRIAL FACTS SHOWING THE PARAMOUNT IMPORTANCE OF, AND IMPERATIVE NECESSITY FOR, AN ISTHMIAN CROSSING.

The London "*Times*" of August 21, 1884, treated this subject so broadly that we give the paragraph entire that relates to it:

"Looking at the ship-railway project from a broad and general "point of view, there can be liltle doubt that it is one which is "fraught with great results. This will be better realized when it is "remembered that the American isthmus separates about 100,000,000 "of the most enterprising, industrious and enlightened people on the "face of the earth, inhabiting the North Atlantic coasts of Europe "and America, from 600,000,000 who inhabit the Orient and the "islands of the Pacific. It is true that the sailing distances which "separate England from India, China and other Oriental countries, "have been greatly reduced by the Suez Canal; but these distances "are almost insignificant when compared with those which the ship "railway would annihilate. For instance, the greatest saving effected "by the Suez Canal between London and Calcutta is about 4,500 "statute miles, whereas the sailing distance by the ship railway from "London to every port on the Pacific coast of North America will "be lessened by nearly twice this great distance, or about 8,250 miles. "The Suez Canal brought London and Canton about 3,500 miles "nearer together by sea. The ship railway would save more than "three times that distance between the great American metropolis "and every port in British Columbia. The American isthmus and "the Cordilleras of North America constitute a narrow but almost "impassable barrier to the interchange of the manufactures and pro-"ductions of 40,000,000 of people in the Mississippi Valley and "Atlantic States, not only with those of 10,000,000 of their country-"men to the west of them, but with the others on the islands and "coasts of the Pacific who are seemingly their nearest neighbors. "The ship railway would give to these descendants of the British "Isles a sea route between their Atlantic and Pacific ports scarcely "a thousand miles longer than the railway between New York and "San Francisco, and it would give to the vast valley of the Mississippi "a gateway equivalent to the discharge of its mighty river directly "into the Pacific. A work designed to confer such great benefits "on the commerce of the world should commend itself with especial "force to this country, which is carrying more than 70 per cent. of "that commerce."

The writer, in an address before the Franklin Institute of Philadelphia, December 28, 1884, gave in detail the following commercial reasons for an interoceanic crossing:

"It is necessary now to glance at the internal commerce of the

"United States, because from that we can estimate what its foreign "commerce would be, if the barriers now obstructing it were "removed, and if the immense surplus products, agricultural, manu-"facturing and mineral, could be shipped at reasonable expense and "in reasonable time, to foreign countries needing our surplus pro-"ductions. During the year 1883, the railroads of the United "States transported over four hundred million tons of freight, valued "at $12,000,000,000. These goods if placed for transportation in "one freight train, carrying fifteen tons to the car, would require a "a train 175,000 miles long, or seven times the circumference of the "earth. In addition to this rail transportation there should be added "many millions of steamboat and coastwise tonnage, probably equal "to fifty per cent. of that transported by rail. While we are carry-"ing, year by year, these immense amounts of freight, the whole "foreign commerce of Europe is less than ten billions of dollars in "value.

"The Mississippi Valley has a commercial internal business, "by river and by rail, of over four billions of dollars. Galveston, "the seaport of Texas, has a tributary net work of railroads more "than six thousand miles in length. The increase of commerce of "the countries west of the United States, that is, those bordering on "the Pacific, has been one hundred and fifty per cent. in five years; "but on account of the impossibility of reaching this business we "have less than *four per cent.* of it—the remainder going to "Europe, via the Cape of Good Hope, the Suez Canal and Cape Horn.

"Our Pacific Coast—California, Oregon and Washington Terri-"tory, is especially adapted to the cultivation of cereals, particularly "wheat. The salubrity of the climate and the richness of the soil "reduce the cost of its production to a minimum. But on account of "the great length of the voyage by which the wheat and the flour of "the Pacific Coast reach Liverpool and other markets of the Old "World, it must compete, under great disadvantages, with the wheat "raised in India and Australia. A voyage of sixteen thousand "miles is necessary to place California wheat in the Liverpool "market. The freight per ton by sea is about $15.00. To haul it "across the continent by the transcontinental railway lines, would "cost $25.00 to $35.00 a ton to New York alone, saying nothing of "the transatlantic voyage."

Another view of the same subject was presented in an address, by the writer, before the American Association for the Advancement of Science, August 26th, 1885, as follows:

"Forty-five millions of our people live east of the Rocky Mountains, and produce nearly all the manufactured goods of the country, which amount annually to the enormous total of over ***five billion dollars*** ($5,000,000,000) in value. Not being able to reach economically or promptly the countries that have need of these manufactured articles, we export but ***two per cent.*** of them, and therefore we cannot compete with those countries of Europe which also manufacture them, and which by the Suez Canal are placed much nearer to those markets. Special attention is called to the unfortunate position of the Mississippi Valley and its seaports on the Gulf; with only eight hundred miles between them and the Pacific, they cannot reach its markets except by a voyage around Cape Horn, which absolutely prevents all commercial intercourse with them. Our whole eastern and southern coast can send its products ***Eastward***, but to the ***Westward*** is an impassable barrier, and Westward are six hundred million people offering their rich treasures to commerce and civilization. The dwellers on the west of South America, Mexico and our own Pacific coast, although seemingly our nearest neighbors, are practically removed farther from us than the East Indies are by way of the Suez Canal.

"The over-sea commerce of the globe is now upward of fourteen billion dollars, and is increasing at the rate of ***seventy-five*** per cent. every decade; so that, if ten years ago it was important to solve the isthmian problem, it is vastly more important to-day, and will be still more so ten years hence."

There is an imperative necessity for a shorter and less expensive maritime route than now exists from our Pacific coast to the Atlantic markets of this country and Europe. The Suez Canal has given to India such an immense advantage in the exportation of cereals to Europe, that this important product of the Pacific coast will soon be without an available market; but 8000 miles saved in distance, and two months and a half in time, will more than restore the advantage we had before the opening of the Suez route. Another important and much needed factor in the development of the Pacific coast States is the immigration of a hardy, industrious and assimilating European population. A short and inexpensive maritime route for passengers from European ports to San Francisco and Portland will induce agricultural emigrants to seek the Western coast, from which they are now practically excluded by the excessive cost of transportation. The prosperity of the Pacific States will also tend to the development of that great railway system which penetrates to the heart of the continent. Water-ways parallel with railways have not checked but have actually promoted the development of the latter. The all-water route to the Atlantic seaboard from the Great Lakes has, no doubt, tended to the development of the Great Trunk Line systems that are parallel to these water-ways. The Mississippi River, the great Water Trunk Line north and south, has stimulated and developed the railroad systems that parallel it from St. Louis, Chicago and St. Paul to New Orleans, and the same is true in reference to Long Island Sound and the Atlantic Coast. A short all-water route from the Hudson to the Golden Gate will develop and enrich the whole country bordering on the two oceans, and increase the business of the transcontinental railways, and enrich them. The opening of the Gulf ports to the Pacific markets will benefit the whole interior country also, and even to the remote lakes of the north and the enterprising cities upon their shores, will be felt the pulsations of the new life which a maritime transit-way at the Mexican Isthmus will infuse into the commerce and industries of our entire country. The joining of the 10,000 miles of Atlantic coast line with the 10,000 miles on the Pacific will multiply the coastwise commerce of the United States, now already immense, beyond the expectations of the most sanguine advocate of an isthmian crossing.

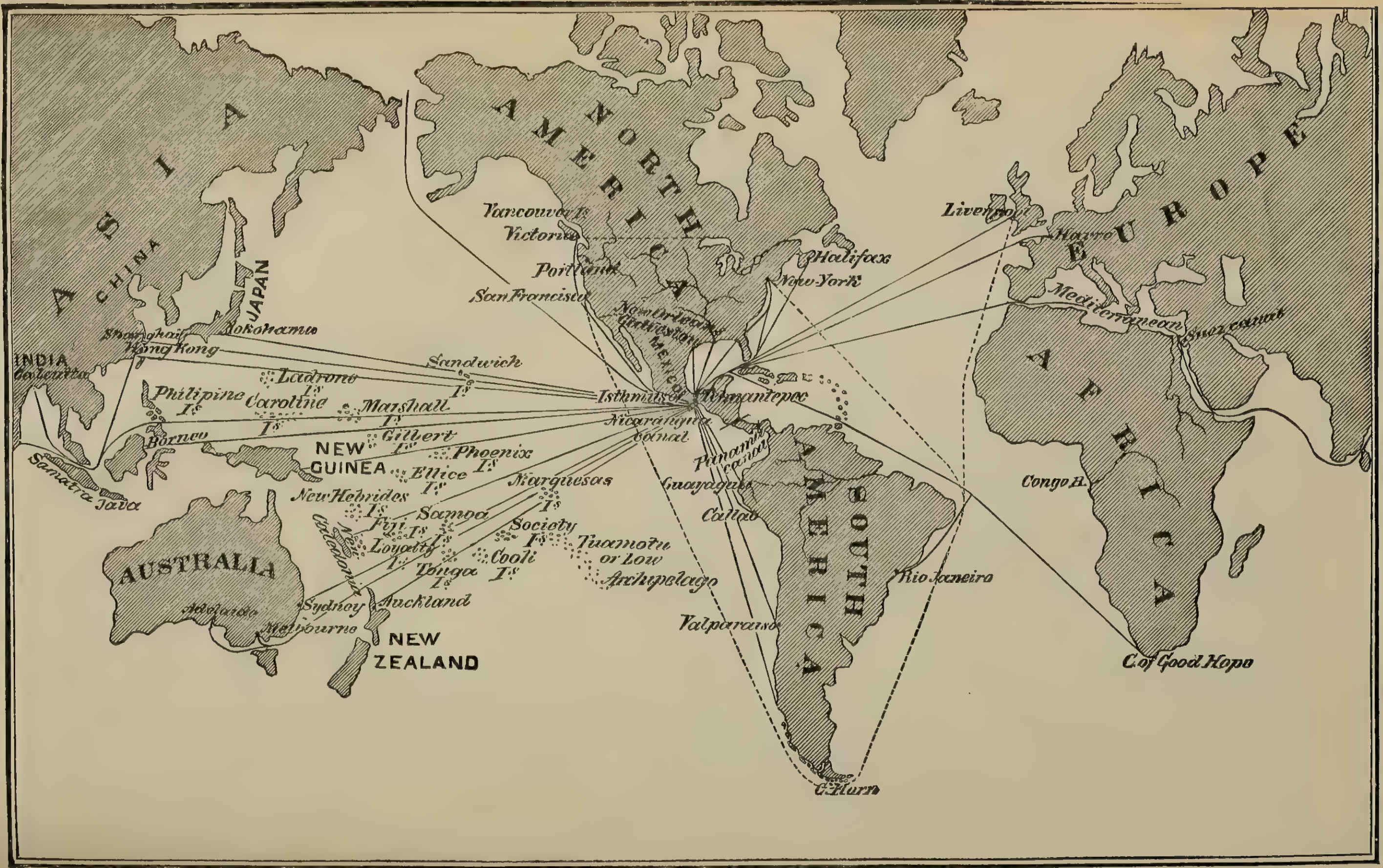


Plate II —Map showing Tehuantepec to be the great Central Barrier to the World's Commerce.

CHAPTER IV.

SUPERIOR ADVANTAGES OF THE TEHUANTEPEC ISTHMUS — COMMERCIAL, CLIMATIC, CONSTRUCTIVE AND STRATEGIC.

It will be seen by an examination of the map of the world (Plate II.) that the American isthmus is about fifteen hundred miles in length, in an air line, and that the distance from the Tehuantepec isthmus to Panama is about twelve hundred miles, and to Nicaragua about eight hundred. It will also be noticed that the Tehuantepec Isthmus is nearest to North America. It may be generally assumed that that crossing of the American isthmus which is nearest to the axial line of commerce will offer the shortest routes. That line may be assumed to be drawn through Hong Kong, San Francisco, New York and Liverpool. The table of distances on pages 63–65, will show how much shorter is the route *via* Tehuantepec on nearly all of the main lines of commerce. The principal purpose of this country in opening interoceanic communication for our merchant marine is to form a closer commercial union of the ten thousand miles of our eastern with the ten thousand miles of our western coast; to shorten the immense distance of sixteen thousand miles that must be traversed by the commerce of our Pacific coast on its voyage to New York or Liverpool, and to obtain the shortest and most economical route for freight and passengers from the Old World, as well as from our own Atlantic coast, to our Pacific States and British Columbia. A crossing at Tehuantepec for ships will accomplish this better than any other location can possibly do. For an ordinary sized steamer it will save, over the Panama route, at least one thousand dollars on every trip ; and, on account of the longer time required to pass the ship through the Nicaragua Canal, the saving over that route will be nearly as great. Commodore Shufeldt, United States Navy, in 1871, in an official report of his survey of the Isthmus of Tehuantepec, said:

> " Each Isthmus rises into importance as it lies nearer to the " centre of American commercial interests, and the intrinsic value " of this eminently national work ought to be based upon the " inverse ratio of the distance from that centre."

The Tehuantepec Isthmus has important advantages in the superior nautical conditions which prevail there. Commander Selfridge, whose great familiarity with the coasts of the American Isthmus gives weight to his opinion, stated as follows, in an official report on the Darien Ship Canal :

> " Lying near the equator, but generally a little north of it, is a " belt some four or five degrees wide, of calms, rains and light baf- " fling winds, that separates the wind systems of the north Pacific " from those of the south. Its average northern limit may be placed " at 8° north and its southern at 3° north, but both are very vari-

"able. This is often spoken of as a 'calm belt,' which term is "calculated to mislead one as to the nature of the weather to be "expected within these limits. Neither does the term, 'region of "variable winds,' appear satisfactory, as it does not express the "peculiar character of the weather. '*Doldrums*' seems to be the "correct word, for although it may be as some say, 'uncouth,' it is "the only single word that conveys to the mind of the seaman all "that can be expressed by saying 'a region of calms, squalls, light "baffling winds, and storms of wind and rain.'" *

That eminent authority on the physical geography of the sea, Lieut. M. F. Maury, says, after describing the winds and currents on each side of the American Isthmus: "You will observe at a glance "that the Isthmus of Panama, or Darien, is, on account of these "winds and calms, in a purely commercial point of view, the most out "of the way place of any part of the Pacific coast of inter-tropical "America." †

He stated in a letter written in 1866, as follows:

"I have spoken about the calm belt about the equator—Panama "is within its range. * * * It is difficult to convey to one who "has never experienced these calms an idea of the obstinacy with "which they vex navigation. We are all familiar with calms at sea "which last for a few hours or even a day, but here they last for "days and weeks at a time. I have known vessels going to or from "Panama to be detained by them for months at a time. * * * "On one occasion the British admiralty wishing to send one of their "sailing vessels into the Arctic Ocean from Panama in time to save "the season had her towed by a steamer through this calm belt and "carried seven hundred miles out to sea before she could find a "breeze. * * *

"These remarks apply to the approach and departure by sea to or "from the Pacific terminus of any route across the Isthmus of "Panama or Darien, and even with greater force to the Atrato and "others on the South American side of Panama. In short, the results "of my investigations into the winds and currents of the sea and "their influence upon the routes of commerce, authorize the opinion "which I have expressed before and which I here repeat, namely, if "nature, by one of her convulsions, should rend the continent of "America in twain and make a channel across the Isthmus of "Panama or Darien as deep, as wide, and as free as the Straits of "Dover, it would never become a commercial thoroughfare for sailing vessels, saving the outward-bound and those that could reach "it with leading winds."‡

---

* House Mis. Doc. No. 113, 42d Cong., 3d Sess., p. 231.

† From testimony of Lieut. Collins, U. S. N., before House Com. on Interoceanic Canals, July 28, 1880, page 41 of testimony.

‡ Mis. Doc. No. 66, 46th Congress, 3d Session, page 41.

Capt. Silas Bent, the well known nautical expert, stated the following before the Merchants' Exchange of St. Louis :

" Mere statements of the difference in miles is a very inadequate " measure of the difference in time that would be occupied by sail- " ing vessels in making these several passages, and when we consider " that three-fourths of the ocean commerce of the world is carried in " sailing vessels, you can see what an important factor this question " of *sailing-time* becomes in the solution of the problem before us.

" The northeast trade winds which extend across the Atlantic are " so broken and interrupted when they encounter the West India " Islands, that they never penetrate the Caribbean Sea ; but the " northwest portion of them, however, do extend into the Gulf of " Mexico, and often so far down as to reach well toward Tehuante- " pec, so that whilst in the Gulf winds are always found, yet the " Caribbean Sea remains a region of almost relentless calm.

" Nor is this all, for the mountain ranges, extending the length " of the Isthmus of Panama and through Central America, offer a " still more formidable barrier to the passage of these winds, thus " throwing them still higher into the upper regions of the atmo- " sphere, and extending these calms far out into the Pacific Ocean, " on the parallel of Panama, with lessening width, for fifteen or " eighteen hundred miles to the northwest, along the coast of Cen- " tral America.

" This whole region of calms, both in the Caribbean Sea and in the " Pacific Ocean, is so well known to navigators that sailing vessels " always shun it, if possible, though they may have to run a thousand " miles out of their way to do so.

" This absence of wind of course leaves this vast area exposed to " the unmitigated heat of a torrid sun, except when relieved momen- " tarily by harassing squalls in the dry season, and by the deluging " rainfalls of the wet season. With these meterological facts in " view, let us now suppose that the Lesseps Canal at Panama, and " the Eads Railway at Tehuantepec are both completed and in run- " ning order ; then let us start two sailing ships, of equal tonnage and " equal speed from the mouth of the Mississippi, with cargo for " China, one to go by the way of the Panama Canal, and the other " by the way of the Tehuantepec Railway, and I venture to affirm " that by the time the Panama vessel has cleared the canal and floats " in the waters of the Pacific, the Tehuantepec vessel will have scaled " the Isthmus and be well on to the meridian of the Sandwich " Islands ; and that before the former vessel can worry through the " fifteen or more hundred miles of windless ocean before her, to " reach the trade winds to the westward of Tehuantepec, the latter " will have sped five thousand miles on her way across the Pacific, " and be fully thirty days ahead of her adversary. For it is a fact " worth mentioning here, that the strength of the northeast trade " winds in the Pacific, as well as the maximum strength of the north- " ern portion of the great equatorial current in that ocean, are both " found on or near the parallel of latitude of Tehuantepec, the "former blowing with an impelling force to the westward of ten or "twelve miles an hour, and the latter with a following strength of "three or four miles per hour."

It has been stated by those who advocate an interoceanic crossing at Panama, that it really makes very little difference to the commerce of the world, whether the route is favorable or not to sailing vessels, for the alleged reason that steamships are rapidly taking their place. The facts given in the report of our Commissioner of Navigation, Mr. Jarvis Patten, for 1884, pp. 22 and 23, controvert this statement·

"The American merchant marine of the present time, although it "has not in later years kept pace with that of Great Britain, is second only to hers.

"Notwithstanding the disadvantages that American shipbuilders "have had to contend against, the high character of their vessels "has been maintained. Our wooden ships are probably the best "and safest vessels afloat. * * *

"'We are apt to talk as if we had no ships,' said Hon. W. P. "Frye, in a speech to the Senate April 30, 1884, 'and you would 'judge from an ordinary discussion in Congress that there was no 'such thing as an American ship to-day. Why, Mr. President, we 'have the finest coastwise trade in size, in ships, in material, in men, 'in discipline, in comfort, in convenience, in prosperity that there is 'in the whole world,' and the Senator might with equal truth have "said the same of the fine fleet of sailing ships engaged in the California wheat trade. When the guano trade, which gave employment to a large number of ships for a period of twenty years, collapsed with the outbreak of the Peru-Chili war, our vessels went "into the grain trade that had been springing up between our Pacific "ports and Europe. This trade, which has since grown to great importance, employs the largest and best-equipped fleet of wooden "ships in the world. * * * *

"The wood sailing ships of this country are thought to surpass "any others afloat in point of safety, and it is a mistake to accept "the opinion that the day of wooden ships is entirely past. Two-thirds of the tonnage of the world is probably still composed of "wooden vessels, while their numerical preponderance is much "greater, notwithstanding the fact that for screw steamers and many "other kinds of craft iron possesses certain advantages.

* * * * *

"In round numbers the total of our sea-going marine was on June "30, 1884: Vessels, *6,636*; tons, *3,700,404*. Of this number, "*422*, of *601,186* tons, were steamers, and *the rest sailing vessels*."

The Report of the Commissioner for 1885, shows an *increase* during the year of **60** sailing vessels, and a *decrease* of **67** steamships.

An early transit-way for ships at Tehuantepec will do much to solve the important problem now before the country so prominently, of promoting our merchant marine and the shipping interests of the United States. It will assist very materially in restoring us to our proper place among the commercial nations of the world. The importance of these interests was eloquently stated by the Hon. Nelson Dingley, Jr., in a speech in the House of Representatives, April 25, 1882, in which he used the following language :

"The efforts of England to control the ocean carrying trade ought "to arouse the American Congress and people to the importance of "our shipping interests. This is a question which affects the "interior as much as the seaboard, the West as much as the East, "the South as much as the North. It is not a local, but a national "question.

"It involves the inquiry as to whether we will save to our own "people the ship-building industry, which employs ten thousands of "workmen, and distributes millions of dollars ; whether we shall "retain a due share of $100,000,000 which we annually pay for ocean "transportation, with all the avenues of employment which it would "open ; whether we shall open up wider markets for American products in China, Japan, South America and the Orient."

According to Mr. Patten, we can build wooden sailing ships cheaper and better than any other nation in the world. But it is certain that an interoceanic crossing at Panama (because of "the Doldrums" or calm belt) will not only prevent their construction in the future, but will drive from the seas most of the sailing ships we now possess, if we do not open up a route for them at Tehuantepec.

It is important, considering the unhealthiness of several parts of the Isthmus, that, other things being equal, that location should be selected which has the greatest climatic advantages. The testimony in favor of the superiority in this respect of the Tehuantepec Isthmus is overwhelming. Mr. J. J. Williams, whose valuable work on the Tehuantepec Isthmus is considered an authority everywhere, from his long experience as a civil engineer on the Isthmus, states as follows on page 172 of his work entitled "The Isthmus of Tehuantepec :"—

"The conviction in the minds of those engaged in drawing up this "report, and one founded on a residence upon the spot, is, that the "climate of the Isthmus is a mild and healthy one, favorable to "longevity, and free from many diseases incidental to more temperate latitudes. The health of those engaged on the survey was "unusually good during their entire stay ; and although frequently by "accidents wetted to the skin and remaining in wet clothes the whole "day, and this occurring on successive days, with limited food at "long intervals, yet none suffered in consequence—a strong proof "that their health was due to the favorable climate.

"Compared with other places, selected for forming a junction "between the two oceans, this Isthmus has peculiar advantages. "With less alluvial land at the sea-level, it is more healthy than San "Juan de Nicaragua, and from its more northern latitude, its mean "annual temperature is less than that of Nicaragua or of Panama. "The latter place has, indeed, a temperature and climate truly torrid, and partaking more of the character of a continent than of an "island, which latter is the peculiarity of the position of this portion of Mexico."

His statement is supported by the report of Dr. Kovaleski, who was surgeon of the party. The following are extracts from his voluminous report:

"I took particular care to inquire among the inhabitants, what "were the diseases from which they mostly suffered, and how "strangers settling among them were affected, and I ascertained "beyond doubt, that not only Minatitlan, but the whole plain of the "Coatzacoalcos River, wherever inhabited, was a remarkably healthy "country. * * *

"I met at Minatitlan several individuals who formed a part of the "French colony, and who had resided there for twenty-two years; "they all assured me that they enjoyed uninterrupted health. The "appearance of the natives proves the country to be healthy, and "our small party had no reason to complain of sickness during its "stay. * * *

"The plain of the Coatzacoalcos River, flat and low, with an "extremely fertile alluvial soil, covered with thick forests. intersected "by many rivers and here and there subject to inundation, although "the least healthy, yet enjoys a high degree of salubrity, and no fears "need be entertained, as proved by the experience of the French "emigrants, for those who may in future settle permanently in "this region, and much less so for those who may cross it as travellers.

"The region of hills and mountains is as healthy as the most "salubrious portions of Europe; full of romantic scenery, it is even "now highly attractive, and will, in progress of time, when inhabited "by an enterprising and laborious population, become one of the "most beautiful spots on the earth.

"Last, comes the plain of Tehuantepec, nearly as healthy as the "hilly region, although warmer, presenting all the characteristics of "a healthy tropical climate.

"All these three regions together form a broad surface of country "from the Gulf of Mexico to the coast of the Pacific, of a great "variety of resources and of remarkable healthiness, a feature "peculiar to the Isthmus, as the lands on both of its sides are very "unhealthy; such as Vera Cruz and Tabasco on the Gulf, Acapulco, "Huatulco, and the coast of Guatimala on the Pacific shore. This "peculiar and exclusive salubrity of the Isthmus, is, in my opinion, chiefly due to its configuration, which forms as it were a gate, walled on both sides by heavy masses of mountains, through which "pass currents of air, that render the country they traverse permanently salubrious."

Mr. Martin Van Brocklin, who spent two years on the Isthmus as Chief Engineer of the Tehuantepec Railroad and one year as Resident Engineer of the Ship-Railway, states in an official report to the President of this Company as follows :

"The country through which the line passes has a fine salubrious climate, with the exception of the immediate valley of the Coatzacoalcos River, where malarial fevers are prevalent for a portion of the year. By reason of the peculiar topographical formation of the Isthmus, there is an almost constant interchange of air currents between the two Oceans. The inhabitants are a robust and healthful people." * * *

The writer's own observations on the Isthmus, and the experience of engineering parties sent there by him, confirm the opinions just given. These engineering parties, composed mostly of unacclimated young men from the northern portions of the United States, went to the Isthmus in March, at the beginning of the tropical rainy season, worked continuously for seventeen months in the woods and on the table-lands and plains of the Isthmus, exposed to hardships and unprotected from the weather ; no case of sickness occurred among them, and they came back to the United States, after completing their work, in robust health.

In proof of the above is offered an extract from the report of Mr. Deming J. Thayer, civil engineer in charge of our surveys for ten months, and who has spent several years on the isthmus and in the states of Colombia :

"Hitherto it has been erroneously supposed that engineering parties could not remain in the field during the rainy season ; that the increase in hardships would result in sickness among the men employed, and this, in connection with the time lost when raining, would render desirable progress impossible. Our experience during an entire and unusually hard rainy season disproves this supposition. No sickness showed itself among assistants or men, little or no time was lost, and progress was nearly as rapid as during the dry season."

Another advantage of great importance is the good harbors that exist on each side of the Isthmus, the entrances to which can with inexpensive works be deepened to any required depth. On the Atlantic or Gulf side of the Isthmus there is a natural land-locked basin, which has a depth of from forty feet to sixty feet. It is several miles in length, of ample width, and in which an immense fleet can lie at anchor in safety. On the Pacific side two beautiful lakes, comprising two hundred and fifty square miles with depths of twenty-two feet, connect with the Pacific Ocean by a natural passage-way. The deep water of the Ocean approaches within twelve hundred feet of the shore line. Mr. Williams states as follows, in reference to the harbor on the Atlantic side :

" As soon as the bar is crossed and the ascent of the river com-
" mences, it widens and deepens, and at seven miles from the Gulf,
" the lead shows a depth of forty feet, which is preserved for some
" distance. * * * The superior advantages offered by this
" stream as a safe and convenient harbor for ships, early attracted
" the attention of the Spanish conquerors. Cortez, in his official
" despatches to the Emperor, Charles V, speaks of the importance
" of this river as furnishing the best harbor to be found on the Gulf
" coast of Mexico."

The voluminous report of Mr. Williams gives abundant evidence that the country is well adapted for the construction of a Ship-Railway, and that the materials are conveniently at hand for constructing the works ; and the report of Mr. Martin Van Brocklin, under whose immediate direction the first complete instrumental survey across this isthmus was made, gives conclusive evidence that the railway can be built on solid ground, and that excellent materials are found near at hand. The following quotations are from his report to the President of this Company :

" Through a distance of thirty-five miles from Minatitlan, the line
" is in an extensive alluvial plain, composed in all its lower portions
" of a heavy tenacious clay. In the higher portions, and in the small
" ridges that are encountered, a clay loam is found, with an occa-
" sional deposit of sand.

" The firm and tenacious character of the material upon which
" the road-bed will rest, and of which it will be composed, will
" secure the railway from any injurious effects of water. Leaving
" this plain, the line enters an undulating table-land, extending to a
" point fifty-five miles from Minatitlan, where it leaves the valley of
" the Coatzacoalcos River and follows a succession of broad valleys
" formed by the Jumuapa, Sarabia, Malatengo and Chichihua rivers ;
" between these valleys there are extensive table-lands, with no high
" or prominent dividing summit between them, but they are inter-
" spersed with isolated hills and detached ranges from one to five
" hundred feet in height, the whole forming an extensive interior
" basin, having a gentle inclination towards the summit, and
" bordered on its eastern and western sides by irregular mountain
" ranges, spurs of the main Cordillera that runs through the entire
" continent, and which makes at this point one of the most marked
" depressions to be found in its whole length. From this basin the
" line passes through a valley formed by a stream called the Pozo de
" Agua, to the plains of Tarifa, an elevated level plateau six miles in
" extent. Crossing these plains, the line reaches the Portillo de
" Tarifa, the lowest and also the most accessible of the many passes
" through this general depression in the main mountain chain.
" From the Portillo de Tarifa the line descends to the Pacific plains
" (reaching them 118 miles from Minatitlan) by a uniform grade,

"following a succession of valleys through the intervening foot-"hills. These valleys are generally narrow, having very abrupt "slopes on their sides. Fortunately the line can be kept near the "bottom of the valleys, avoiding any difficult or questionable class "of construction. The heaviest excavations will be in cutting "through spurs of the hill sides, or through divides between adjacent "valleys. Across the Pacific plains the line can be given almost any "desired direction, the surface being remarkably even and uniform "in character." * * * "Many varieties of valuable timber are "found, very durable in character, and suitable for either permanent "or temporary work in construction, throughout the entire line, with "the exception of about twenty miles at each end of it.

"Good building stone is found near the line at short intervals "after leaving the valley of the Coatzacoalcos River. Granite, "limestone, sandstone and quartzite are among the varieties of stone "available for purposes of construction.

"The principal rock cuttings to be encountered near the summit "will be in a clay slate formation, limestone appearing at a lower "elevation, and granite in the higher ranges on each side of the "line." * * * "A careful instrumental survey of the bar at the "mouth of the river shows that there is at ordinary tide, fifteen "feet of water over it. Surveys and soundings made during the "last thirty years give conclusive evidence that this bar has changed "very little during that time. Borings to the depth of twenty-six "feet encountered no other material than sand and clay, much the "larger portion being sand ; a stratum of clay was found at the "bottom of the borings. This bar has a striking resemblance to "the bar at the mouth of the South Pass of the Mississippi River, "except that it has less than one-fourth the distance across it, from "twenty-six feet depth of water on the inside to the same depth on "the outside, and it can be deepened by the same methods that "gave such remarkable results at the mouth of the Mississippi "River."

Another important consideration is the strategic advantages which the Isthmus of Tehuantepec has over any other possible route. It is located nearest to the United States ; it is in the Republic of Mexico, the strongest republic, next to the United States, on the American continent, and connected with us not only by close political and social ties, but also commercially by lines of railroads built and building from our country into and through it, and by several steamship lines to its ports in the Gulf and on the Pacific.

The Atlantic terminus of the ship-railway is in the Gulf of Mexico, whose approaches from the Atlantic at the Florida Straits and the Straits of Yucatan, can be easily defended by our navy in case of war ; enabling us to maintain uninterrupted communication between all of our Gulf ports and the Ship-Railway, even though every Atlantic port should be blockaded and the enemy's cruisers infest the high seas. The harbor at the Gulf can be thoroughly defended by inexpensive fortifications on the high lands which rise immediately above the entrance channel, and by torpedoes. Equally favorable conditions for defense exist on the Pacific. From these facts it is evident that, if Mexico and the United States unite to protect this transit way, no other power or powers could successfully interfere with it.

In a pamphlet written by Mr. Alexander D. Anderson, on the Tehuantepec Ship-Railway, in 1884, on page 11, the strategic advantages are also stated as follows : " The railway system of the " United States, which now amounts to 125,000 miles, has, during the " past year, been extended to the City of Mexico by the completion " of the Mexican Central road from El Paso to the City of Mexico. " A second line, the Mexican National, is already half complete " between Laredo and the City of Mexico, and three other lines are " projected from the Rio Grande to the Mexican capital. These five " lines are to be prolonged southward to Tehuantepec by a line " already projected," and now, in 1885, being built by the Mexican Government, " thereby placing that Isthmus within easy reach of " the troops of the two sister republics, should they ever have " occasion to defend it. * * *

" By water, also, the Isthmus is equally accessible to the troops of " Mexico and the United States by steamers through an inland sea " which may easily be closed at the two passes between the Atlantic " and the Gulf. These remarkable advantages as a defensive point " may be seen by a glance at the Map of the World. It is in this " respect in marked contrast with the Isthmus of Panama or Nicara- " gua which would be exposed to attack."

CHAPTER V.

THE SHIP-RAILWAY, ITS PLANS AND PRACTICABILITY.

Many plans and projects have been brought forward for transporting vessels through or over the American Isthmus at various points, but until recently these plans have all contemplated artificial water channels. It was left for Mr. James B. Eads, after accomplishing the important work of opening the mouth of the Mississippi River to commerce, to propose and develop the plan of a ship-railway across the Isthmus of Tehuantepec. The important advantages of every nature stated in the previous chapters, together with the fact that an artificial water channel, either at sea level or by means of locks, would be altogether too expensive, were the reasons for the inception of the ship-railway.

The following description of the Ship-Railway was written by Mr. Eads, for "JOHNSON'S UNIVERSAL CYCLOPEDIA," (Revised Edition, pp. 252 to 256 :)

"After the publication, in 1879, of the estimates made by the Ship-Canal Convention which met, at the solicitation of Count de Lesseps, in Paris, the writer was led to investigate the practicability of the transit of loaded merchant-ships of the largest class by railway, to ascertain if a more economic method of transit than by canal could not be thus secured. It was generally known that the transportation of sea-going craft overland had been accomplished at the Isthmus of Corinth by the Athenians, 400 B. C. ; that in the Middle Ages the Turks had transported ships of war in a similar manner ; that a hundred years ago Swedenborg had carried three vessels of war across one of the peninsulas in the Baltic ; that before the construction of the Suez Canal was commenced a ship-railway was proposed in lieu of it by Brunlees and Webb, two English engineers of note ; that they had also in 1872 proposed and made plans for the construction of a ship-railway across Central America for ships of 1200 tons burden ; and that, in 1875, Mr. H. G. C. Ketchum proposed a ship-railway across the Isthmus of Chignecto, between the Bay of Fundy and the Gulf of St. Lawrence, for vessels which would weigh, with cargo and machinery, about 2000 tons. Hence the idea of transporting ships by rail is not a new one. The plans hitherto proposed for this purpose did not contemplate, however, the handling of the largest merchant-ships. Crude estimates of the cost of the practical devices for this method soon gave assurance of great economy, in both money and time, in favor of the ship-railway. Further studies led to such improvements in the carriage on which to transport the ship, and the docks necessary to place it on the carriage and railway, as assured the absolute safety of the largest loaded ship during transit."

* * * * *

" The methods for raising, hauling and handling vessels, evolved from five years' study of the subject, will now be given. At each terminus is excavated a basin leading on the one side from the river, and on the other from the lake, to a dock, which will be walled on the sides and on one end either by masonry or by creosoted timber. In this dock will be placed a pontoon, which, like an ordinary lifting-dock, will be capable of raising the vessels (Plate III.). This pontoon will be made of steel plates, with bulkheads athwartships and fore and aft, so as to render it strong enough to support the weight, when out of the water, that it has to carry. Its size will be about 450 feet in length, 75 feet in width, and from 12 to 15 feet in depth. There will be built upon it, on each side, a water-tight tower whose top will stand above the surface of the water when the pontoon is submerged and resting on the bottom of the dock. The pontoon is sunk by opening sluice-gates ; these sluice-gates are in its sides, and are operated from the top of these towers. It is raised by means of powerful pumps, which withdraw the water from the pontoon and discharge it into the surrounding dock or basin. These pumps are to be sufficiently powerful to raise the pontoon, with a vessel upon it, in from 15 to 20 minutes. It is guided in its vertical movement by large anchor-rods, which are secured in the foundations of the dock. These rods pass freely through the pontoon, but are separated from its water-spaces. The heads of these guiding-rods prevent the pontoon from rising above a certain level, and also resist its buoyancy when the vessel has been run off of the pontoon on to the railway. In order to lift a vessel without injury to itself and to place it upon a cradle or carriage for transportation without any possible injury to this carriage, it is necessary to distribute or equalize the weight of the vessel so as to bring no more weight upon one part of the carriage than upon another. A vessel has not the same weight per unit of its length throughout its whole extent, but, being a girder capable of resisting the flexures and bending moments which it must necessarily meet in its voyage on the ocean, it is capable of resisting, without injury to its structural integrity, this necessary equalization. In fact, when the vessel is in its natural element—smooth water—it is not equally borne by the water per unit of its length, from the fact that certain parts of the vessel are more buoyant than other parts. For instance, the bow and the stern of a steamer, or of any craft, have a tendency to droop, and it is often the case that after a vessel has been launched the ends of the keel are found to be below its central part. This equalization is accomplished by a series of hydraulic rams, or presses, which are built into the pontoon, and are founded upon a second deck about 6 feet below the main, or upper, deck of the pontoon. These rams are arranged in longitudinal and transverse lines, which are spaced in each direction about 7 feet apart. The combined or total area of the rams in any one transverse line is exactly equal to the combined area of every other transverse line. There being seven rams in one of these transverse lines in the midship section of the vessel, their area, if combined into one ram, would be exactly equal to the one ram under the bow or the stern of the vessel. As we approach toward

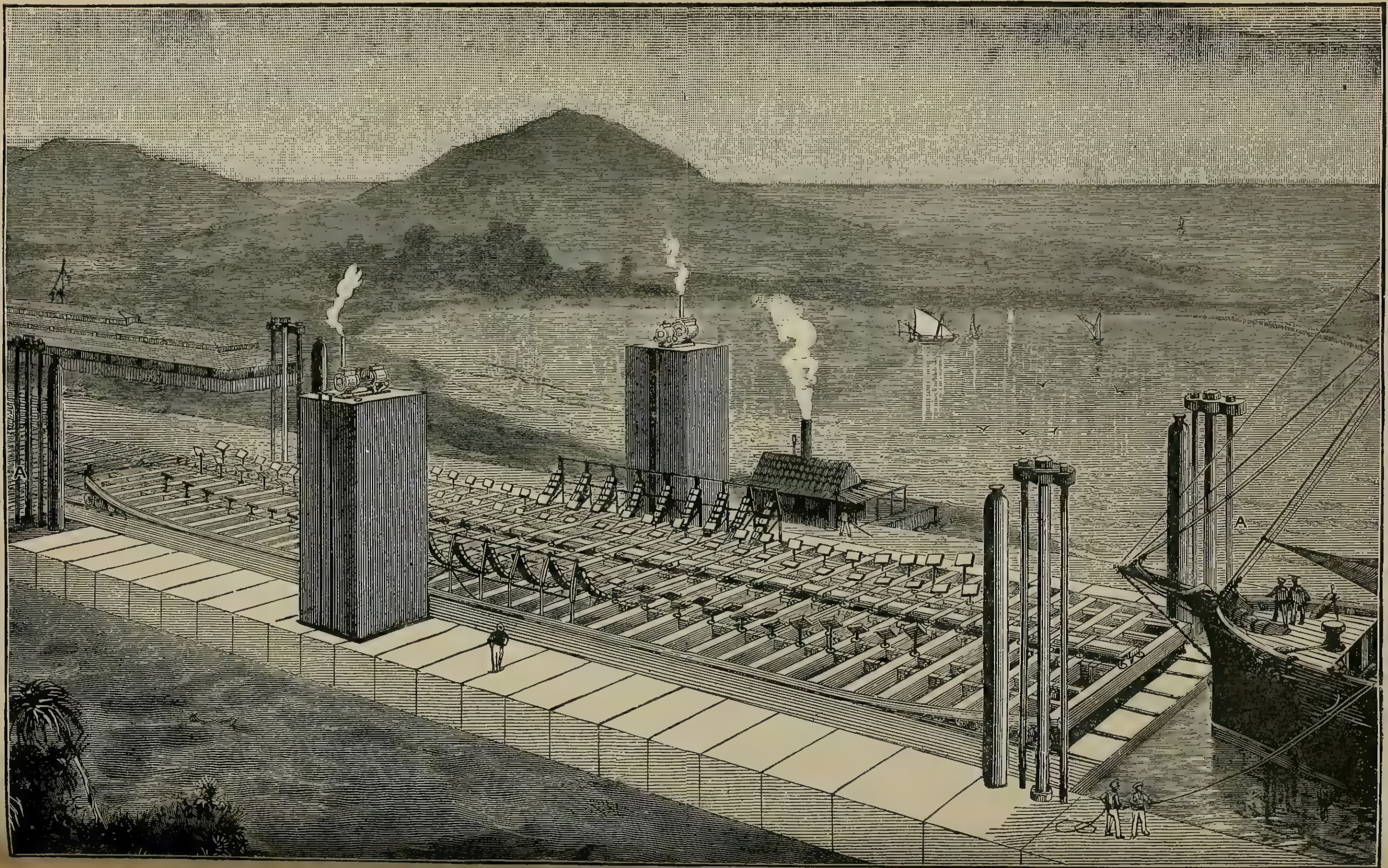


Plate III.—Perspective View of the Dock and Car.

the bow or the stern from the centre there are five rams in a transverse line; as we approach still nearer to the bow or the stern there are three rams in each; and under the bow or the stern there is only one ram for each 7 feet of the ship's length. These rams are all connected by means of water-pipes, through which pressure is applied to the whole system of rams by means of a hydraulic pressure-pump placed on the top of the towers on the side of the pontoon. These rams have a vertical movement of 7 or 8 feet. When the principle of hydrostatic pressure is understood, it will be seen that any mass, whatever may be its shape, that rests upon this system of hydraulic rams when they are under pressure, will be equally borne throughout its whole extent, providing it has a bearing upon all the rams in the system. In the case of a vessel, either a sailing-ship or a steamer, this equalization is so perfect that the excess of weight in the central portion of the vessel when she is loaded will be taken up by the lines of rams toward the bow and the stern, which have immediately over them a weight less than that which they are able to sustain. This system of rams is grouped by means of valves, so that, if necessary, a greater pressure can be brought to bear upon one part of the vessel than upon another. In practice there would be a large number of valves, so that the system could be applied to different sizes and shapes of vessels as each might require. It will be seen, therefore, that when the vessel rests upon this system of rams she is waterborne; for she is resting upon so many columns of water under pressure, which equalizes the weight of the vessel by a process which is similar to that employed by Nature herself when the vessel is resting in her natural element. Attached to the water-pipes is a pressure-gauge, which will serve to show the exact weight of the mass borne on the system of rams.

"As a body floating under water has no stability, the pontoon which raises and lowers the vessel has none when wholly under water. As it will not always be possible to bring the centre of gravity of the vessel fore and aft directly over the centre of the pontoon, there will be a tendency for the pontoon to come up out of level if there is more weight upon one end of it than upon the other. To obviate this the pontoon is balanced, not by water let into the compartments, as is the case with a balance-dock, but by mechanical appliances called 'hydraulic governors.' (See Plate III., A. A.) These governors are located at the four corners of the pontoon, and at other points along the sides of the pontoon if in practice it should be found to be necessary. They consist of plungers working in cylinders. The plungers are attached to the pontoon, and the cylinders to the dock walls. On each corner there are an inverted cylinder and an upright cylinder. One upright and one inverted cylinder on the diagonal corners are connected with each other by means of pipes. The cylinders and the pipes are water-tight, and are filled with water. Now, if there is, say, 100 tons more weight upon one end of the pontoon than there is upon the other end, one-half of this will be borne by each of the two plungers secured to the heavy end of the pontoon, and there will be brought upon the water in each of the two inverted cylinders secured to the dock walls at that end, a weight of 50 tons. The pressure due to this weight is immediately transmitted through the pipe to the upright cylinder on the diagonal corner at the other end of the dock, and the water in this cylinder instantly reacts with a 50-ton pressure as a plunger upon the metal plunger in the cylinder, and thus compels this corner of the pontoon to go down with the same velocity and to remain at the same level as the diagonal corner of the pontoon with which it is connected. If the excess of weight be at the other end, this action is reversed. By this means the pontoon is made to rise and fall in a perfectly level plane, and consequently is always so balanced as to work freely upon the guiding-rods. A pressure-gauge attached to the governor-pipes will indicate the amount of excess of weight on either end of the pontoon. If it is too great for the governors to balance with safety, or for the wheels at that end of the carriage, the pontoon would be lowered and the position of the vessel shifted. On the deck of the pontoon and between the longitudinal lines of rams are laid the rails for the carriage which is to transport the vessel. These rails are six in number and constitute three ordinary gauge-tracks, each 4 feet 8½ inches. The outer rails are 29 feet apart between gauge-lines. The carriage (Plate V.) to transport the vessel is built of steel girders. As the vessel is equally supported throughout its length, it cannot be bent, and, as the rails resting upon an immovable road-bed constitute a continuous girder, the carriage is made with its greatest strength in its cross-girders, the longitudinal girders being only of sufficient strength to carry the trucks which are placed under them. The cross-girders are spaced about 7 feet apart, exactly as the rams in the pontoon are spaced. They are supplied with a system of supports, or keel and bilge-blocks, for the vessel. The keel-block running the whole length of the vessel is continuous, and is sufficiently elastic to conform to any irregularities in the line of the keel. The supports under the keel-block, and the other supports of the vessel, are made of heavy steel rods in which a thread is cut for an adjusting-nut, which can be run up or down on the rods. The upper end of these rods, under the bottom and bilges of the vessel, are supplied with an adjustable hinged batten (see Plate IV., Fig. 4, *top*) on a universal joint. These battens have an area of about 9 square feet each, and are cushioned with rubber or other material, to prevent injury to the vessel when it rests upon these supports. The screw and batten may be said to resemble in general shape a huge music-stand.

"The process of lifting a vessel is as follows: The carriage is run from the railway upon the pontoon and secured in exact position on it by means of locks. This insures each screw being exactly above a hydraulic ram. The water is let into the pontoon by sluice-gates, and it goes down, with the carriage upon it, until it rests upon the foundation of the dock, or to a sufficient depth in the water to allow the vessel to be floated in over it without striking the battens of the carriage, which are previously let down by means of the adjusting-nuts until the heads of the screws rest upon the girders of the carriage. The vessel is then brought in over the pontoon and

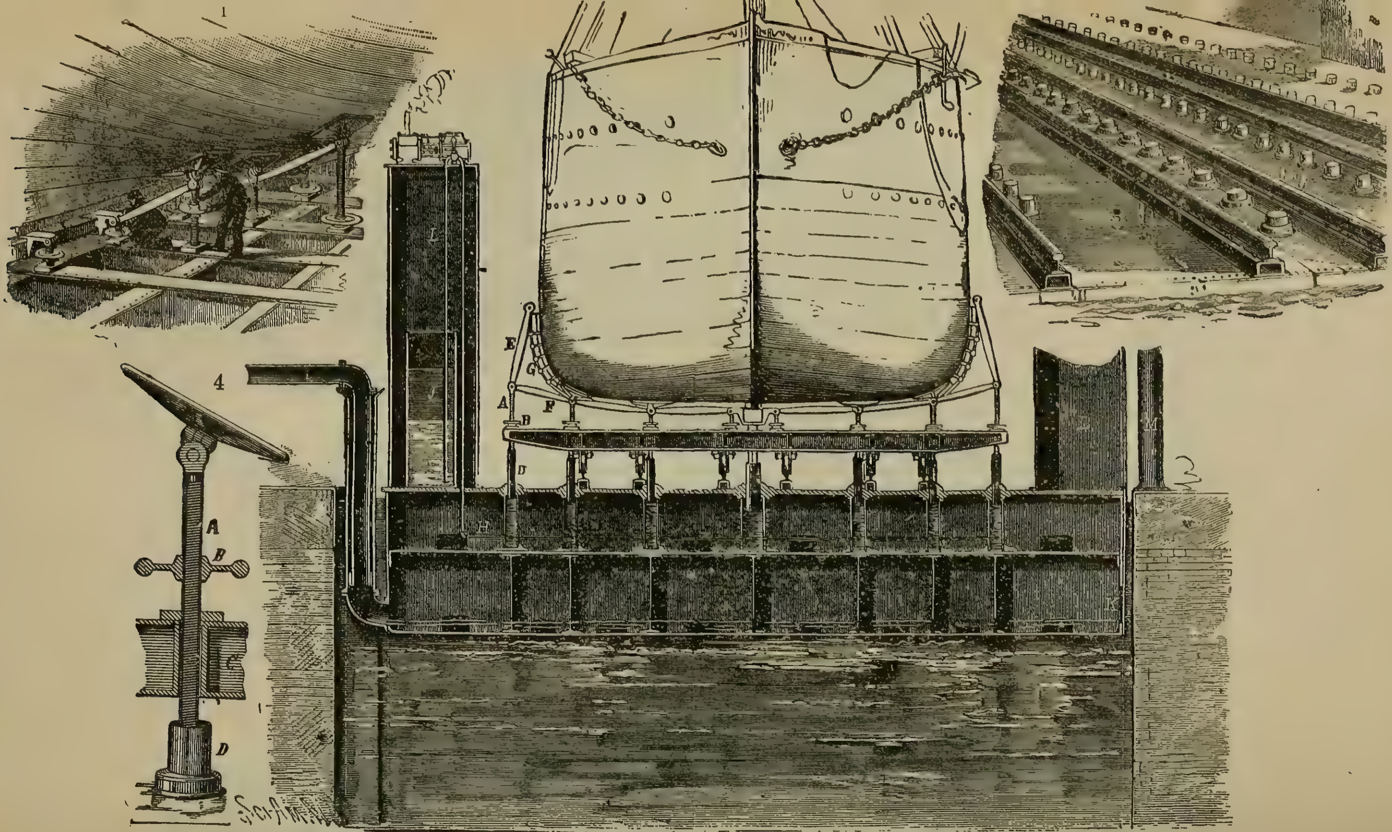


Plate IV.—DETAILS OF THE LIFTING DOCK.

Fig. 1 shows the process of running down the adjusting nut of the supports to a bearing on the plates of the cross-girders. The details of the support are shown in Fig. 4, with the hydraulic ram forcing it up to its position under the vessel. **A**, is the rod with the thread cut in it; **B**, the adjusting nut; **C**, the girder; **D**, the ram.

Fig. 2, Cross-section of the pontoon, towers and carriage. **A**, is a side support; **E**, **G**, **F**, the adjustable hinged girth; **D**, the ram; **L L**, the towers for the pressure pumps which are on the top of the towers; **I**, is the pipe through which the water is withdrawn from the pontoon by the centrifugal pump; **J**, is the reservoir from which the water is taken to force a pressure through the pipes to the rams; **K**, is one of the cylinders for the hydraulic governors.

Fig. 3.

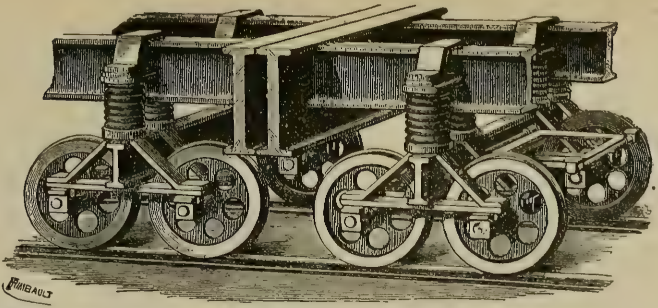


Fig. 2.

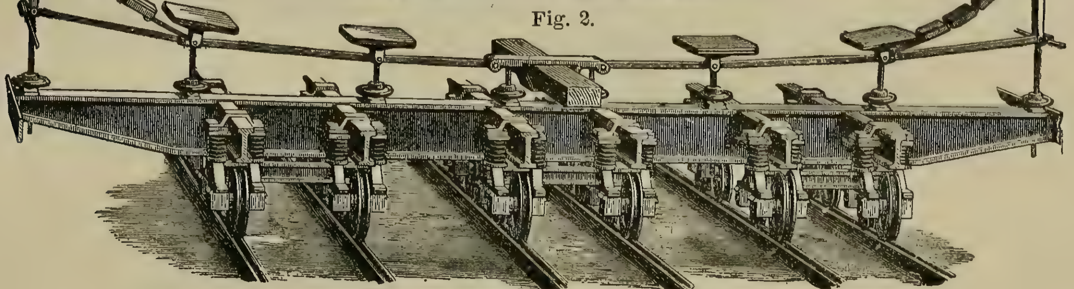


Fig. 1.

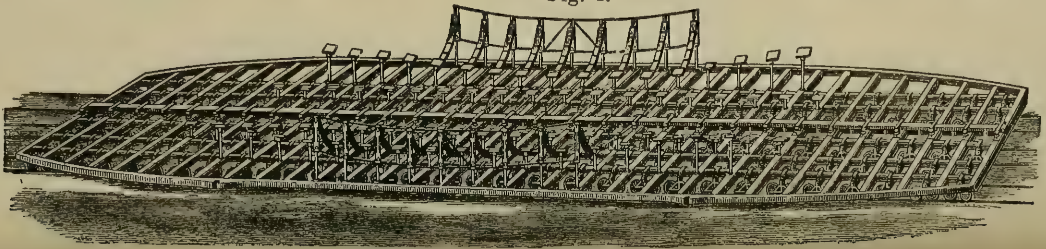


Plate V.—Details of the Car.

located as near as possible with its centre of gravity over the centre of gravity of the pontoon. Adjustable guides from the side of the dock, working by hydraulic power, quickly and gently bring the vessel so that its keel is directly over the keel-block of the carriage. The pontoon-pumps are now set at work, and the pontoon, with the carriage upon it, comes up under the vessel. Just before the keel-block and battens come into contact with it the hydraulic pumps on the towers of the pontoon, which actuate the rams, are set at work, and they gently force up under the keel, the bottom, bilges and sides of the vessel the whole system of supports. The valves are then closed, to prevent the water-pressure from escaping from under the rams, and the pontoon-pump continues to lift the pontoon, with the vessel on it, up out of the water. As the vessel rises, resting upon the system of rams, its weight upon them becomes every moment greater and greater, some of them being slightly depressed and some slightly elevated, and the equalization through the system goes on as the vessel rises, until, when it is entirely out of the water, its whole weight is equally distributed from stem to stern. While it is still resting upon the screws, which have been pushed up and are held by the rams, the adjusting-nuts are run down on the thread of each screw until they have a firm bearing upon the plates of the cross-girders. When this adjustment has been made—which would require only a few minutes for ten expert men to accomplish—the valves are opened, the water-pressure escapes from the rams, and they recede downward into the pontoon. The weight of the vessel has now been transferred from the rams to the carriage, and the equalization of the weight upon the carriage is as perfect as it was upon the rams themselves. As the girders of the carriage are spaced the same as the transverse lines of rams, if we arrange the same number of wheels with each girder, we will then have the same weight imposed upon every wheel, which is intended to be not over eight and one-half or nine tons, which they will be able to sustain, for each wheel will be tested to twenty tons when it is manufactured. As it is a common practice for the railways of this country, and especially so for those of England, to impose a greater weight upon the driving-wheels of locomotives, it will be seen that this is an admissible load for the wheels, which will be arranged in a very simple form of trucks without bogies. As it is necessary for the carriage to move on practically straight lines, the wheels can be arranged with two flanges instead of with one, as a precaution against derailment, although the breaking of one wheel or of several wheels will not affect the integrity of the carriage. Over each axle is a powerful spring, (see Fig 3, Plate V.) which will also be tested to twenty tons before closing. It has a vertical movement of six inches. When the maximum load—a 5000-ton weight—is placed upon the carriage, these springs will be closed to within three inches. This gives an elastic bearing for the vessel and the carriage, and will serve two purposes—one, to take up any slight irregularities there may be in the track ; the other, to prevent any possible jar to the carriage or to the vessel. When the load has been thus equalized upon the carriage, it is evident that there will be no more weight brought upon the rails at any point than there is brought upon them by a locomotive on an ordinary railway; so that, so far as the strain upon the rails is concerned, a rail of ordinary dimensions would answer the purpose. But, to avoid the possibility of undue strain, the rails will weigh from 100 to 120 pounds per lineal yard, which is about twice the weight of an ordinary railroad rail. These rails will be of steel, and will rest upon long steel ties which extend under the whole six rails of the railway. They will have a large bearing-surface, will be securely fastened to the rails, and will rest upon the best quality of ballast or concrete. The road-bed itself will be constructed of the very best materials obtainable, and in the most thorough manner. The road-bed will be from forty-five to fifty feet wide.

"The motive-power for hauling the loads will be furnished by powerful locomotives, which will have imposed upon the driving-wheels of each at least 100 tons, to give great traction-power. As the maximum load, including the carriage, will be only 5,650 tons, it will not be difficult to haul it over the grades of the railway. The ordinary consolidated engines of the day will pull from 1,500 to 2,000 tons without difficulty over grades up to twenty feet to the mile. Three such ordinary engines would therefore haul the maximum load; but, with locomotives of double the power of these engines, no difficulty is apprehended in performing the work required, and at ten miles per hour.

"A carriage constructed after the manner described must necessarily move on practically straight lines. It will, however, permit the use of a curve of twenty miles' radius, which is practically a straight line. At points on the line where such a curve as this would necessitate very heavy construction-work in the shape of mountain-cuttings or very high embankments, a change of direction will be obtained by means of turn-tables. (See Plate VI.) These turn-tables are very simple and economical in construction, maintenance and operation. By their use a large amount of money will be saved in construction. The location of the railway, which has been made with great care by instrumental surveys and detailed examinations of the country, is, through the rougher portion of the isthmus, along a succession of valleys between high hills and mountains. In order to pass from one valley to another and take advantage of the natural lines of the country, these turn-tables are employed. Five of them only are necessary. They are built as follows: A segmental basin of masonry is arranged to receive a pontoon and a certain quantity of water. This pontoon is so centered in this basin that it will revolve around a central pivot, although it does not rest upon it. When not revolving, the pontoon rests upon concentric bearing-surfaces in the bottom of the basin. In order to turn a vessel, it is run on to this pontoon, into which the water of the basin has been admitted; the water is then pumped out from the pontoon into the basin again by means of a powerful centrifugal pump until the pontoon floats sufficiently to be lifted from its bearing surfaces. (See Plate VII., Figs. 1 and 2.) It is then, by means of stationary engines

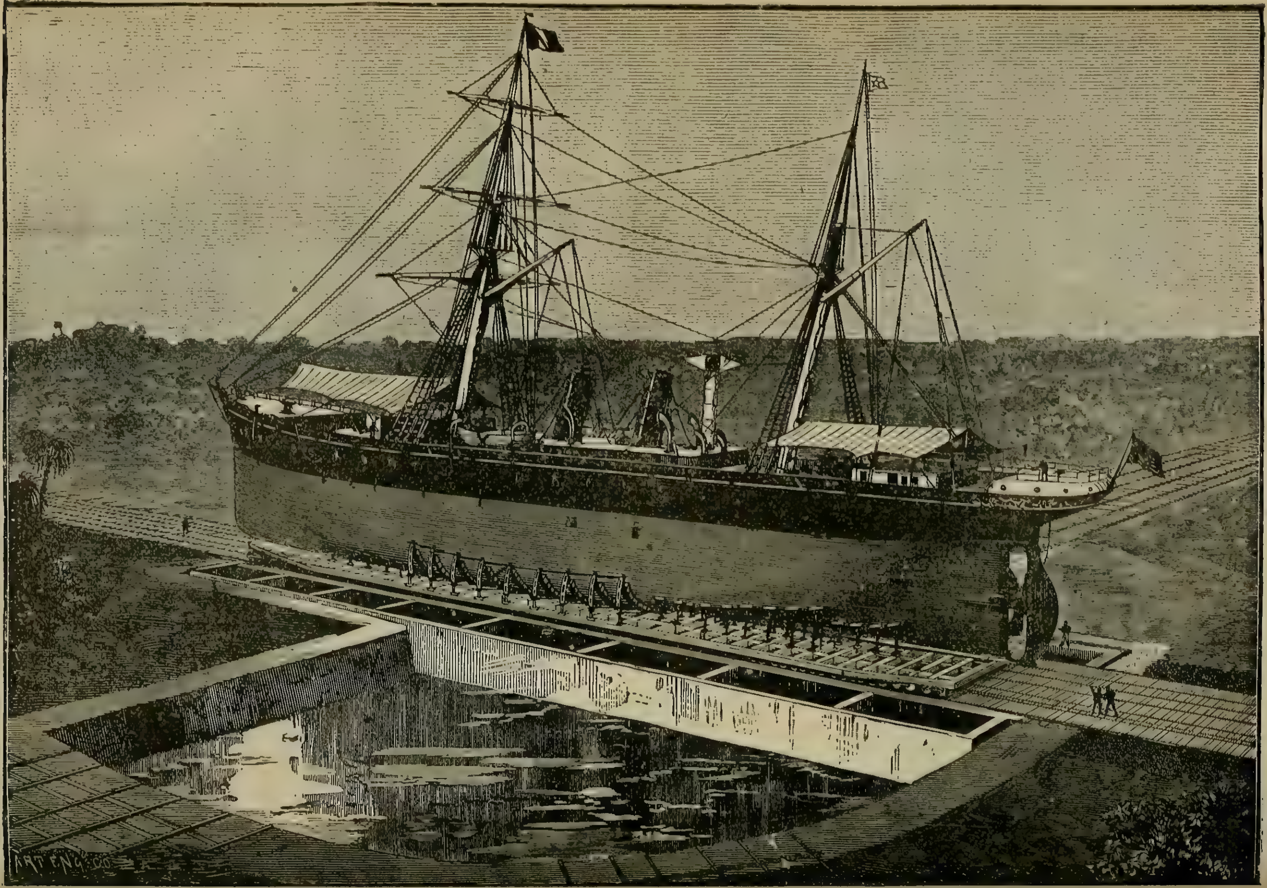


Plate VI.—PERSPECTIVE VIEW OF THE FLOATING TURNTABLE.

Fig. 1.

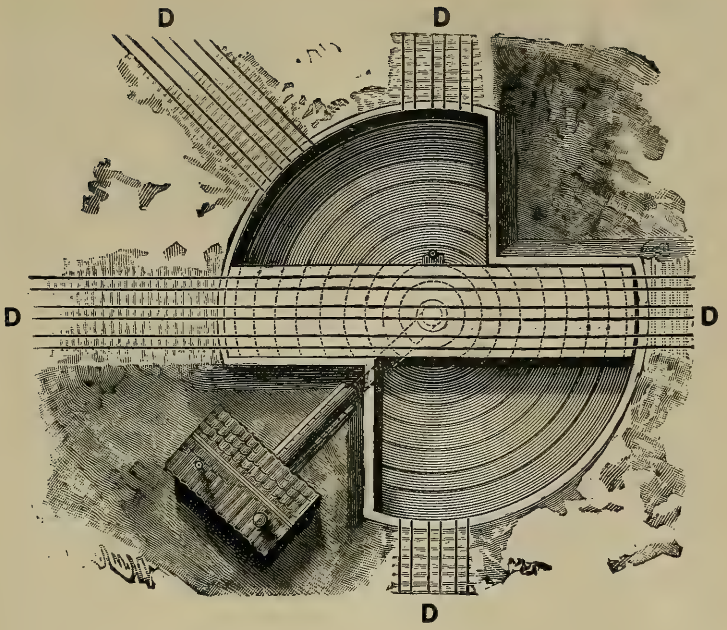


Fig. 2.

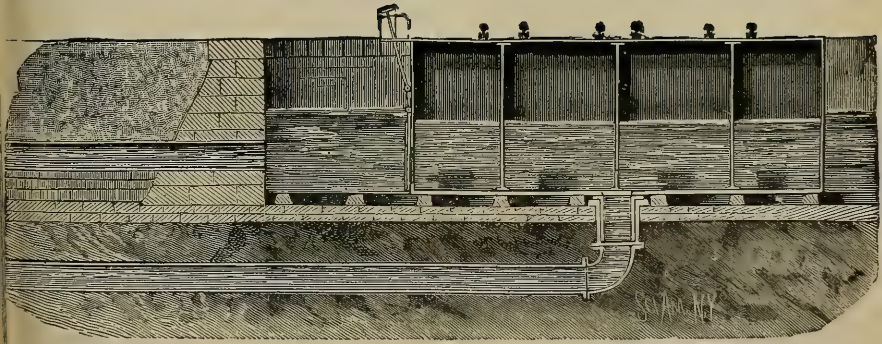


Plate VII.—Details of the Floating Turntable.

worked by a cable or other means, turned about the central pivot, while floating in the water, until the rails of the deck of the pontoon correspond in line with those of the railway in the new direction. The water is then admitted to the pontoon by means of sluice-gates or valves, and it is again grounded upon the concentric bearings in the bottom of the basin. The vessel is then run off the pontoon upon the railway until it arrives at the next point where a change of direction by this means is to be made, when the same operation again turns the vessel in another direction. At three of the five turn-tables, examinations show that water under a head from the mountain-streams can be utilized to perform the work without the use of the pumps. These turn-tables, while they are a necessity, will also be employed for two very important purposes—one, as passing-places for vessels going in opposite directions. A vessel moving from the Gulf of Mexico toward the Pacific meets at one of these turn-tables another coming from the Pacific, and is on its arrival run across the turn-table on to an extension of the track. The turn-table is then revolved to take on the vessel coming from the opposite direction, which then goes on its way. The first vessel is then run back upon the pontoon and sent on its course, the whole movement occupying but a few minutes. It will be seen that, the weight of the vessel having been equalized upon the carriage by the hydraulic rams, if the centre of the carrriage is brought over the centre of the pontoon, the latter will be balanced when it rises from the bearing-surfaces in the bottom of the basin ; but if the pontoon is not exactly balanced, it can be brought level by letting water into one or more of the compartments on one or the other end of the pontoon. The second purpose that the turn-tables will subserve will be as dry-docks where vessels can be run out on tracks radiating from the segmental basin, on which they can be cleaned, painted or repaired, as the case may be, and where they can remain as long as necessary. (See Plate VII., Fig. 1, D.) As every iron ship must be taken out of the water twice every year, the expense of docking—which is considerable for a large vessel—will be saved. There will be one of these turn-tables at each terminus of the road, near the dock, to facilitate the handling of the business at those points, and they will be located also at other points on the line where the operation of the road may show meeting-points for vessels to be required.

"The changes in grade on the railway will be made by very flat vertical curves. The elasticity of the vessel isself and the movement of the springs will allow a change practically of about two inches in 400 feet. A curve established on this basis has been applied to the working profiles of the railway and found to be perfectly practicable in construction."

* * * * * * * *

"In the discussion of the mechanical appliances, it is only necessary to refer to the very thorough and substantial manner in which a sea-going vessel must necessarily be constructed to withstand successfully the various strains to which it is subjected on the ocean. The flexures in both directions, the torsional strains, and a combination of these different strains which every vessel undergoes in a seaway, make it absolutely necessary that the vessels should be built with a large factor of safety. Then, again, their decks and beams and plates and ribs stiffen the whole structure for passing through those shocks and impacts which they receive on a voyage, without injury to their structural integrity. The greatest strain which a vessel could possibly undergo when lifted and transported in the manner we have described bears no comparison to those which the same vessel must undergo in its natural element. It will be seen, also, that by the very large number of broad-surfaced supports on which the vessel is carried she cannot be strained in any part of her bottom or bilges or sides, and even one that is old and tender can sustain no injury in transportation. A large number of experts in designing, building and handling vessels of all kinds and sizes could be quoted to show that in their minds there exists no practical objection to the plans as herein described." (See Report of Senate Committee, pp. 70 to 80.) "Obstacles, one after another, have been overcome, by study and by using principles and appliances, with perhaps new adaptations, that are already in use in the world for the same purposes, though perhaps on a smaller scale."

In this age such wonderful progress has been made in mechanical appliances that any proposed work required for the good of mankind seems to be in the power of man to accomplish. In railway advance, especially, the development in power, speed, economy and adaptability to the wants of man, is marvelous. In a recent address before the British Association, by Mr. B. Baker of England, we find the following statement:

" Fifty years ago the chairman of the Stockton and Darlington " Railway, when asked by a Parliamentary committee if he thought " any further improvements would be possible on railways, replied " that he understood in future all new railways would have a high " earthwork bank on each side to prevent engines toppling over the " embankments and to arrest hot ashes which continually set fire to " neighboring stacks, but in other respects he appeared to think per- " fection was attained. Shortly before the introduction of loco- " motives, it was also thought perfection was attained when low " trucks were attached to the trains to carry the horses over the por- " tions of the line where descending grades prevailed, and all the " newspapers announced, with a great flourish of trumpets, that a " year's experience showed the saving in horse flesh to be fully 33 " per cent."

In remarkable contrast with this is the record of a train recently hauled over the New York, West Shore and Buffalo Railway. This train ran several miles at the rate of forty-three seconds per mile, 84 miles per hour. The weight of the train was 155 tons, and the average running speed for the whole distance—426 miles—was 57 miles an hour.

It is interesting to note the remarkable advance also in locomotive construction during the last fifty years. The first engine built by the Baldwin Locomotive Works in 1832, named "Old Ironsides," weighed something over *five* tons; the cylinders were 9½ imches in diameter by 18 inches stroke; the wheels were made with heavy cast iron hubs, wooden spokes and rims and wrought iron tires; the frame was of wood placed outside the wheels, and the boiler was 30 inches in diameter. The *Philadelphia Chronicle* of November 24, 1832, noticing a trial of this engine, stated:

"This engine will draw **30** tons gross on a level road."

The locomotive was set at work on the railroad, and the following appeared in the newspapers:

"Notice. The locomotive engine (built by M. W. Baldwin of this "city) will depart daily *when the weather is fair*, with a train of pas-"senger cars. *On rainy days horses will be attached.*"

In remarkable contrast with their first locomotive built 53 years ago is the immense "Decapod," or ten-wheeled coupled consolidated locomotive, built by the Baldwin Works recently for the Dom Pedro II. Railway in Brazil. Its general dimensions are as follows: Total weight of engine and tender ready for work, **224,000** lbs, equal to **112** net tons; diameter of boiler, **64** inches; heating surface, **1943** square feet; cylinders, 22 inches by 26 inches, and it is guaranteed to haul **3600** gross tons on a level track.

On December 7th, 1885, a freight train over one mile long and weighing 3253½ gross tons was hauled into New Orleans over the Mississippi Valley Railroad, by one engine weighing 55 tons.

We can see from the above with what ease the locomotives of the day, built for *ordinary* railroads, can haul a loaded vessel over the Ship-Railway by attaching as many as may be required to the car according to the size of the vessel.

Advances as remarkable have also been made in the construction of railways, and in the various kinds of rolling stock. In other departments of mechanical science, especially in the employment of hydraulic appliances there has also been a great advance. There is now building in Scotland by Messrs. Sir John Fowler and B. Baker, civil engineers, the greatest bridge in the world. Two of its spans are each one thousand seven hundred and ten feet in length, and the top chord of the bridge is over three hundred and fifty feet above high tide. The superstructure will require forty-six thousand tons of steel, all of which, mostly composed of plates, is being bent into shape by hydraulic presses of various descriptions. In the address of Mr. Baker alluded to, we find the following:—

"Hydraulic appliances are also an indispensable part of the "scheme for erecting the great seventeen hundred foot spans. Massive "girders will be put together at a low level and be hoisted as high as "the top of St. Paul's Cathedral by hydraulic power. Continuous "girders, nearly a third of a mile in length, will be similarly raised. "Not only the girders, but workmen, their sheds, cranes and appli-"ances will be carried up steadily and imperceptibly as the work of “erection proceeds, on platforms weighing in some instances more than one thousand tons.

* * * * * * * *

“Not merely in the superstructure, but in the construction of the foundations, were hydraulic appliances of a novel character indispensable at the Forth bridge. Huge wrought iron caissons, or cylinders, seventy feet in diameter and seventy-two feet high, were taken up and set down as readily as a man would handle a bucket. * * * It would be possible, indeed, with the appliances at the Forth bridge, to arrange that the simple opening of a valve should start digging” (by hydraulic power) “at the bottom of the sea, riveting at a height of nearly four hundred feet above the sea, and all the multifarious operations of bending, forging, hoisting and extending over a site of a mile and half in length.”

With this wonderful adaptation of hydraulic power to moving heavy masses before us, who can doubt that it may also be applied to the lifting and handling of heavily-loaded vessels, and in the distribution of their weight, as has been described above.

That the vessels on the docks or on the railway will not be subjected to strains injurious to them, or in fact greater than they undergo in an ordinary voyage, is evident on a little reflection by those who have carefully studied the illustrations and description. It may not be known, even to those who are accustomed to travel on the ocean, that a vessel undergoes strains in her ordinary voyages very severe compared with any she will possibly meet with on the Ship-Railway. The following letter is from a gentleman of high scientific attainments and large practical experience as an engineer, and his observations may be implicitly relied upon :—

The Cornell University,
Department of Civil Engineering,
E. A. Fuertes, Dean.

Ithaca, New York, Nov. 3d, 1884.

Dear Mr. Corthell :—Not knowing the address of Captain Eads, I have been unable to send him the following, which was undertaken as an abstract experiment ; but *dedicated* to him, when found to bear strong testimony to his foresight.

I was on board the Str. Germanic, a staunch ship of the White Star line, in the Fall of 1881, homeward bound from Liverpool. On the first Sunday after leaving England, the wind was blowing at the rate of sixteen to eighteen miles per hour, rather gustily, with a moderately high sea. It then occurred to me to measure the deflection of the ship, being impressed not only by the effect of the waves upon her length and sides, but also by the strain upon her frames, imposed by the enormous moments of her huge spars. I had with me a reconnoitering field glass (provided with cross hairs, power 30) which I secured to a convenient angle in the wood work ; and soon became satisfied that the deflection was large enough to be measured with the means at my command. I then counted 55 steps (each 29”) from the telescope to an awning post painted white, and 109.5 steps to a rope in the rigging ; and to the rope I tied a piece of white tape in range with the telescope.

I now tied a piece of black string to the white post, in the range of the telescope and the distant white tape in the rigging, adjusting it when I thought there was no deflection. By observing the nature of the waves, this adjustment was found much simpler than I anticipated. I then found the central deflection, by keeping the pointing on the distant tape, and observing the up and down motion of the black string (on the post) across the field, measuring the amplitude of this motion by the position of particles of dust adhering to the cross-hairs of the eye piece (negative). After many trials I measured on the white post, the distance subtended (from the telescope end of the line) by the dust particles above mentioned, and found for the middle "total deflection" nearly 13 inches. Also, it was evident that the flexure was greater when bow and stern were raised, than when the midship section was raised as determined by observing the position of the ship upon the waves she was riding at the time ; this shows that the deck was stiffer in extension than in compression.

I must here say, that the measurements were difficult to make, but are substantially correct to establish beyond doubt the large amount of absolute deflection. It is not claimed that they are accurate enough to give with precision the relative deflection. However, the line being nearly two hundred and sixty-four feet long ; the white post at its middle point ; and supposing the concave and convex flexures to be about alike, the mean deflection was : $\dfrac{1}{\frac{264' \times 12''}{6.5''}} = \dfrac{1}{487}$ of the length.

The weather was only a little rough, and very far from what must be encountered by any sea-going ship ; yet I am sure no railroad bridge, short of exposure to a cyclone is ever subjected to the strain suffered by the Germanic on this Sunday, with absolute safety.

Though a short span bridge is thumped considerably by a fast moving train, it cannot be compared to a ship when a sinking or receding sea instantly withdraws the enormous water pressure against her sides, and the reaction of her frame is reinforced with equal suddenness, by the outward pressure of her cargo. Also the sea strikes blows with concentrated force upon restricted areas of the ship's surface, causing the "dreaded tremor" from stem to stern, and teasing her joints and timbers with all kinds of flexures, torsion and impacts. Only those who have personal experience with the sea in a hurricane can realize the stiffness required in a sea-going vessel. It is strange to see how strongly intolerant popular misconceptions get to be in questions of this kind. No one would doubt for a moment that a railroad bridge can be transported safely over any railway by resting its extremeties upon trucks, used as moving abutments ; and yet, I know of no railroad bridge of the ordinary types, that would not break to pieces if the abutments used were two floating scows made to stand the surging and blows of a stormy sea, even if the scows were *supposed* to be rigidly connected. While a ship must be trussed so that it may stand safely on end, or shaken violently when held in the middle or by her extremities, the popular prejudice against the ship-railway is based upon the unjustifiable *assumption* that all ships are wanting in the very quality that they must possess, and do possess in the highest degree, viz : Stiffness, compared to which the stiffness of a railroad bridge is as that of a flexible reed.

The deflection of the Germanic surprised me to such an extent, that I went to her engine room to study the expedients adopted to counteract the effect of this deflection upon the moving lines of her engines. I found the engine frames had been devised with an evident previous knowledge of an expected large deflection. I venture to say that the future history of total side support to ships in railway transit will be like that of many previous phantoms ; like the dangers of the railroad wheel tire, and the introduction of steam and gas into dwellings. I expect to see the day in which a 5000 tonner will cross the American Isthmus loaded with coal, resting on her keel, with only enough side support to keep her deck level, and especially iron vessels or ships built on purpose for this traffic.

Wishing you God Speed, believe me,

Faithfully your friend,

E. A. FUERTES.

The plans described on the preceding pages are completely illustrated in a working model over thirty feet in length. The argument enforced by this model is unanswerable, and it has led many, who at first doubted the practicability of the plans, to express entire confidence in their success. The two letters which follow are characteristic of many that might be offered, and they speak for themselves :

"A. K. Miller & Co., Ship and Steamship Agents,
"37 Carondelet Street, New Orleans, June 18, 1885.
"E. L. CORTHELL, ESQ., 34 Nassau Street, New York.

"DEAR SIR :—I am in receipt of your esteemed letter of the 15th inst., and am much pleased to note you are quite well, and trust your enterprise will meet that support which it so justly deserves.

"In this connection, permit me to make some observations regarding your railway project for the transportation of ships across the Isthmus.

"As a practical seaman and commander of ships for many years, during which time I have had the occasion to raise and repair large ships in different styles of docks, marine railways, etc., I had formed, or rather had come to the conclusion that to raise a loaded ship in the manner proposed by Capt. Eads, and to transport her as suggested, would subject the ship to such strain that it would be simply impracticable, and could not succeed.

"While your ship-railway model was on exhibition at this city, I visited it on several occasions, and after a thorough examination of the manner of raising, application of rams and distribution of lifting power, I have but one opinion regarding the question—which is, that ships of the largest class, loaded with full cargoes can be safely lifted, and transported in the manner proposed without subjecting them to any more strain than they would undergo during a sea passage, and in fact much less fatigue than they would encounter during gales of wind such as ships are at times subjected to in all oceans of the world. I trust you will be enabled to push your work to a speedy and successful issue. Your ship-railway would largely develop trade in this quarter of the globe, and would also increase shipments and traffic from the Pacific coast.

"Very truly yours, A. K. MILLER."

"Washington, June 25, 1885.
"E. L. CORTHELL, ESQ.

"DEAR SIR :—Your letter of the 15th inst. came duly to hand. Sickness and excess of business must be my excuse for delay in answering.

"In reply to your questions, I would state that I was manager and Superintendent of the Marine Railway at Nassau, N. P., Bahamas, for ten years, and during that time—as near as I can remember—I hauled out and repaired between 800 and 900 vessels, about one-third of which were steamers, and perhaps one-fifth of them loaded.

"As we charged so much per ton for cargo on board, as far as practicable the vessels were discharged before being taken out.

"My experience was that it was easier and safer to take out a loaded vessel than one in ballast. The railway was about 800 feet long, and similar in all respects to your model, the principle being the same. There was not one dollar's damage done to any vessel in hauling out while I had charge of the railway.

"This, I believe, answers all your questions.

"Yours respectfully, EPES SARGENT,
"338 Penna. Avenue."

The address delivered by the author, August 26, 1885, before the American Association for the Advancement of Science, on "The Interoceanic Problem and its Scientific Solution" has brought many letters from various parts of the world confirming its statements. The following is characteristic of these letters ; it is from a gentleman who is considered as an authority in mechanical engineering, and is a prominent writer on subjects kindred to the ship-railway, having been selected to write several important articles in Spon's Dictionary of Engineering, on Mechanical Engineering subjects.

[TRANSLATION.]

"Lausanne, Oct. 6, 1885.

"MR. E. L. CORTHELL, Civil Engineer, New York.

"SIR :—I have to thank you for the honor you have done me by sending me a copy of your address before the American Association for the Advancement of Science on 'The Interoceanic Problem and its Scientific Solution.'

"I see with great interest that you and Mr. Eads meet with approval and support in the bold project of an interoceanic passage of which you are the promoters.

"The science you have displayed, the correctness of your principles and the breadth of your views lead me to hope that you will be enabled to accomplish this great work.

"As you have said, it is necessary only to develop and perfect by all the mechanical resources which the science of the present day possesses—what has already been done under other forms on a smaller scale.

"This will not be the first time that your country has shown to the world what grand enterprises can be accomplished by a young and enterprising nation full of life and faith. Accept, sir, the expression of my high consideration.

J. GAUDARD."

As to the comparative cost of transportation by ship canal and ship-railway, the proofs can be easily adduced that the latter is the least expensive. In discussing this subject of economy of the ship-railway, we will divide it into two parts, the *theoretical* and the *practical*. The following is abstracted from the paper on "Canals and Railroads, Ship Canals and Ship-Railways," presented by the author to the Annual Convention of the American Society of Civil Engineers, June 25, 1885 :

"The boat or steamer in its passage through the water in a re-
"stricted channel creates a hill up which it is constantly climbing.
"The more rapid the speed the steeper the hill. Thus the boat is
"absolutely compelled to move at a very slow speed ; in fact, it
"would be almost impossible to attain in a narrow and shallow canal
"its normal ocean speed."

Proof of the above is found in the well known valuable work on Naval Architecture by J. Scott Russell, and the following extracts are from chapters 31 and 32 of that work :

"The water excavated from the way of the ship causes a con-
"tinual accumulation of water in the region of the canal, *towards*
"which the ship is moving. * * * *

"If the wave travel ahead of the ship, only one-fourth of the space
"of the ship, the accumulation will be quadrupled ; one-eighth will
"make it eight-fold and so on, until the progress of the ship becomes
"extremely difficult, or impossible.

"This is what constantly takes place, as the rise of the ship and
'the pace in a narrow and shallow canal become greater. Practical

"working at high speed becomes, not difficult or costly, but impracticable. * * * *

"The consequences of this rapid increase of head accumulation, "which takes place as the speed of the wave in advance of the vessel diminishes, are very serious. *First*, it throws the ship's head "up out of trim; *next*, it increases the pressure of water on her bow; "*third*, it makes her travel up-hill; *fourth*, it produces a backward "current along her sides. And these hindrances to speed accumulate rapidly—much more rapidly than as the square of the resistance, until the amount may become insuperable; that is, many "times the resistance due to the law of the square of the speed.

* * * *

"It is now necessary to notice the complimentary effect to that of "accumulation in advance of the vessel; it is subsidence of water "astern. It being known that the excavated water is sent on in advance of the vessel, it becomes plain that the channel out of which "this water has been taken must have its height lowered by the subsidence of the water into the vacant canal out of which the ship "has been drawn. * * * *

"Not only is the section of water-way affected by head accumulation, but the skin of the ship is affected by it, as the additional "head and hollow give rise to an increased speed of water, running "from stem to stern, causing additional friction. * * *

"It must not be forgotten, that these last conditions do not "affect sea-going ships in their ordinary duty. But in the navigation "of shallow waters, rivers like those of India, ship canals and all "sorts of inland navigation, they are all important."

In reference to the *practical* part of this subject, the records of canals and railways are full of evidence to show that the theoretical reasons above given have been at work during the last fifty years reducing the cost of transportation on railways and preventing any reduction on barge and ship canals. In a report before a select committee of the House of Commons on canals, Mr. James Allport, who was for many years manager of the Midland Railway Company, testified particularly in regard to the transportation of coal. He stated: "In thirty years the railway-borne coal into London has increased from 377,000 tons in 1852 to 6,546,000 in 1882." Also, that the amount of sea-borne coal to London remained nearly stationary during that time and that "during the whole of the years of canal-"borne coal into London, although the canals had independent routes "not under the control of railways, the total of the canal-borne coal "was 7,964 tons against railway-borne coals 6,750,000." The following is his opinion in general: "I am quite sure of this, "and I say this after upwards of forty years' experience as a railway "manager, that the canals cannot compete with the railways, "whatever they do."

Canal construction has been nearly discontinued in England, and he states as a fact as follows:

"I do not remember a single canal being constructed during the "whole of my railway career, unless it be some short branch of a few "miles in length."

From carefully prepared tables of canal and railway transportation, we find that in every instance on canals, and even rivers, in England and France, the cost of "conducting transportation" is greater than it is on many first-class railroads.

In reference to canals in the United States, the latest report of the Census Bureau, based on the census of 1880, "Vol. IV, Transportation," is very suggestive. The following extracts are taken from it: Page 729, "sketches of the abandoned canals of the country are given, together with a supplemental table which, in a measure, shows the influence of railroad competition upon these great works of the past generation. * * * Adding together the totals of the operating and abandoned canals, as shown in tables one and two, we have a grand total of 4,468.60 miles of canal. * * * Of these 1,953.56 miles are now abandoned and a large portion of the remaining 2,515.04 miles is not paying expenses. This is largely due to railroad competition. * * * In New York State, 356.66 miles of lateral canals, costing $10,235,314 have been abandoned. In Pennsylvania 447 miles are abandoned, costing $12,745,780. In Ohio, 205 miles, costing $3,000,000 have been abandoned. Indiana with the aid of her creditors, constructed 379 miles of canal in 1851, costing $6,325,262, all of which were abandoned upon the construction of railroads along the lines of the canals. The most enterprising and sagacious men in the country were engaged in projecting and building these canals, but their expectations with regard to them were never realized."

The Ohio Canal, running the whole length of that State, is shortly to be abandoned, on the recommendation of the Engineer of the Board of Public Works; it not being self-sustaining.

The average ratio of expenses to the gross receipts on all the canals operated by the State and corporations in the United States is sixy-five per cent., which is greater than that of first-class railways.

The following extracts in reference to the cost of transportation by canal and railway in this country are from two prominent and experienced railroad managers:

"If the tonnage which passed shrough this canal" (Erie) "was "delivered for transportation to the West Shore Railway," (New York, West Shore and Buffalo) "it could be hauled and delivered "more cheaply than by the water route, and in less than one-quarter "of the time now required."

* * * * * * * *

"The contest between the canal and the rail has always interested "me. Ten years since I became satisfied that the abandonment of "medium-sized canals, such as the Erie, the Delaware and Hudson "and Delaware and Raritan, would simply be a matter of time. " * * In regard to the Erie, two classes of expenses are "rarely noted when a camparison is made with the rail; one being "the maintenance of way, which the State pays for, or rather the "increased taxes of the people ; the other a depreciation and renewal "of equipment, which the boatman does not count, as for some years "there have been no renewals and but slight repairs. The only "expense returned is that incurred in actually running the boats, "equivalent to the railroad charge of 'conducting transportation'. "Now, making the necessary allowance, the West Shore can transport "at least thirty per cent. cheaper than the canal."

If we take up the subject of *ship* canals, we find the same resistances to overcome, and a great increase of expense with the increase of speed. In Volume 66, page 162, Proceedings, Institution Civil Engineers, Great Britain, the following statement is made :

"The Warrior" steamed through the Suez Canal in 1870 in twelve hours fifty minutes, or at the rate of 6.85 knots per hour. She was 380 feet long and her midship section was 1,219 feet, with an indicated horse power of 5,469, and with a speed upon the sea of 14½ knots per hour. The *retarding current* which the Warrior was obliged to overcome was nearly 11 feet per second."

On page 261, the statement is made by Captain John Steele from his own experience, that with a ship drawing 20 feet, a speed of more than 4 knots an hour would result in mishaps. The speed through the canal is restricted by rules to five knots an hour. In a paper recently read before the Austrian Society of Engineers, on the Suez Canal and its intended improvements, it is stated :

"The long time occupied in passing the canal is a serious objection. "The maximum speed allowed is five knots per hour. This, and "the time lost in turn-outs, makes the trip a long one ; and greater "speed, which would be better for steering the vessel, is prohibited "on account of the dangerous wave action on the shores. Notwithstanding these precautions, these slopes are damaged continually, "although a considerable length of the slopes has been protected by "rip-rap. The area of the cross-section of the canal is 3,956 square "feet. This is too small for vessels with a displacement of 645 "square feet, and is the reason for running many vessels ashore. "(From 1870 to 1883, eleven per cent. of all vessels went into the "shore.) These stranded vessels are pulled off by three powerful "steam tugs, at the expense of the Canal Company ; this work "usually consumes five hours."

On the Welland Ship Canal in Canada, the average speed is one mile per hour, and it is the same on the North Holland Ship Canal from the Helder to Amsterdam.* The estimated time of passage through the projected Huron and Ontario Ship Canal, 100 miles long, was *four days.*†

Numerous experiments on railroads, on the ocean, and on barge and ship canals, show that generally the increase of resistance to railway trains is very small with the increase of speed ; to vessels on the ocean as the *square of the velocity*, and in the restricted channels of barge and ship canals, as the *cubes of the velocity ;* e. g. If ther esistance is ten pounds per ton at two miles per hour on a railroad, it would be nearly the same at four miles per hour on the railroad ; on the ocean forty pounds, and eighty pounds on the barge or ship canal.

---

* See Internal Commerce United States, 1885, page 494.

† See Report New York Produce Exchange, 1872-1873, page 66.

Having stated the theoretical and practical proofs in regard to the cost of transportation on railroads and canals, let us extend the development of the railroad to the greater work of transportation by ship-railway, and we will find proofs of the statement that a still greater decrease in cost of moving goods will result.

Ordinary sea-going steamers transport freights at a cost of about 0.5 mill per ton per mile, running expenses alone considered, and not including interest, insurance, depreciation of steamer, and profit, or 0.3 mill by the best examples of sea-going steamers. The cost on a ship canal at two miles per hour (assumed as the economical speed), as against twelve miles per hour on the ocean, and with the same power required, would increase the cost six times, or to 3.0 mills per ton mile. The cost of hauling on a railroad on the same basis would be about 0.6 mill—one fifth as much only. It may be stated broadly that railroad transportation in this country has been so far reduced in cost as to make it possible to haul freight at about four mills per ton per mile including *all* expenses, even the terminal and other handlings of *local* as well as through freights, also expenses of repairs and renewals, general expenses of management, and the many other charges that go to make up the details of the cost of transportation. The cost of *handling* freight is not perhaps appreciated by even railroad managers, for, while immense and continual reductions are being made in the cost of *hauling*, but little advance has been made in reducing the cost at terminals and stations. It costs as much to *handle* a ton of goods at the New York terminals as it does to *haul* it to Albany or Philadelphia. Another important item in the cost of ordinary railroad transportation is the labor. An army of employees is required for all the various duties devolving upon railroads ; hundreds of returns and reports require a large clerical force. The relations and connections with other roads in cars, goods, back charges, &c., make a large amount of work necessary. The assorting of goods for different destinations, the handling of cars on sidings, and in terminal and division yards require not only a variety of labor, but expensive power also.

The expense of doing all this work is however so systematically performed and recorded, on the best railroads of the country, that the cost of the various items is fully known. We need not have further to do with it here, but enter at once upon the Ship-Railway method, and its great advantages over the ordinary railroad.

The estimated cost of operating the Ship-Railway is as follows at the Isthmus of Tehuantepec:

First. The maintenance of the permanent way. The cost of maintenance in this country on a first class double track railroad, including sidings, yards, buildings, &c., in other words, everything but rolling stock, is about $1700 per mile of railroad, sidings being at least 25 per cent. of the whole. The wear on the rails and ties, switches and frogs, is constant and expensive. On the ship-railway, the speed being slower, the line straight, the rails heavier, and the whole superstructure more nearly perfect, there will be much less wear and none of the expense arising in this country from frost and snow. There is, however, a greater rainfall, probably more deterioration of materials in wooden structures, and an increased cost of labor; also, 50 per cent. more track to be kept up. It will be fair to estimate the maintenance at $2500 per mile, or a total for the whole distance (134 miles) of	$335,000
Second. The cost of operating the terminals, from a careful detailed estimate of cost of labor, coal, materials and repairs, will be $350 per day, or for 365 days, $127,750; and for two terminals, per annum, ...	255,500
Third. The cost of operating the five ship-railway turn-tables, at $300 per day	109,500
Fourth. The motive power for hauling vessels, per annum, 4,000,000 tons at 0.52 mill per ton per mile, ...	278,720
Fifth. Telegraph expenses, ...	20,000
Sixth. Incidentals, ...	40,000
Seventh. General expenses, ...	50,000
Total, ...	$1,088,720

Add for other expenses and contingencies, 10 per cent.; the total then reaching $1,197,592, or in round numbers, $1,200,000, or 30 cents per ton on 4,000,000 tons.

The cost of operating the Ship-Railway, may be ascertained by another method, as follows:

The cost per ton per mile on the best railroads, is not over 3 mills per ton per mile for *through* freight. From this should first be deducted the cost of such work as does not pertain to the Ship-Railway. All such items of cost appear on page 81, Penna. Railroad Report of 1885.

Deducting irrelevant items we can properly reduce the cost 48 per cent., or to 1.56 mills; but a still further reduction is proper. Much larger loads are carried, the ratio of paying to non-paying loads is greater, the frictional resistance per ton to the motive power is reduced at least 30 per cent., the rails are straight, the track perfect, the grades light, and greater results are obtained with less fuel and service.

The history of railway transportation has conclusively shown, that "the cost of railway transport *diminishes* as the *Unit of dispatch is increased.*"

The average paying load on the New York Central Railroad in 1883, was 199 tons, the average non-paying load, 350 tons, total 549 tons. The average load on the Ship-Railway may be assumed at 1,800 tons paying load, or 3,000 tons total load; or about *nine* times as much paying load as on the railroads. The above favorable conditions allow us to reduce the cost to *1 mill per ton per mile.*

Fifty per cent of the cost of operating is labor, which should be doubled for a tropical country, increasing the cost to 1.5 mills, or for 134 miles, 20.1 cents, which it should be remembered is the *total* cost, not simply the cost of *carriage.*

The cost at the terminals will be as follows:

If ten ships are handled daily, of 1,500 tons each, the labor at the dock will be per day,		$174.00
The coal, stores, wear and tear of machinery,		150.00
Total,		$324.00
To cover contingencies, say,	$350.00	
Or, per ship,	35.00	
Or, per ton,	2⅓c.	
Or, for two terminals,	4⅔c.	

The cost of operating the five turn-tables in making changes of direction (which, however, will not be more than the cost of operating the sidings on railroads) will be *two* cents per ton for all.

The total cost per ton will therefore be, 20.1 cents plus 4.66 cents, plus 2 cents, equal to 26.76 cents. Adding, however, 15 per cent. to cover any unexpected expenses, we have a total cost of about *30* cents per ton.

This estimate, though made on an entirely different basis, agrees with our previous statement.

In comparing the Tehuantepec Ship-Railway with the Ship Canal, the cost of construction will be $75,000,000 for the Ship-Railway, and probably $400,000,000 for the Panama Canal, and $200,000,000 for the Nicaragua Canal (Major McFarland's estimate for the latter was $140,000,000 with labor at $*1.00* per day, while the average cost on the Panama Canal is $*2.00.*) The cost of maintenance will also be much less.

The road-bed of the Railway is above the water, and is nowhere subject to the dangerous floods or engulfing slides from immense cuts. The road-bed is 50 feet in width, whereas the prism of the canal must be at least 200 feet wide, from which all washed-in material must be removed by very expensive means.

The Suez Canal, where the rain-fall is about *2* inches per annum, required in 1883, in the canal proper, the dredging of 781,282 cubic yards. The cost for cleaning the canal was about 2,000,000 francs ($400,000). The total expenses for maintenance and working the canal, were $*2.784,869.* The material in this canal can be cheaply thrown out on either side by the dredges, and only 40 per cent. of the distance is through cuts over 10 feet high above the water line.

The expense at Panama will be largely in excess of that at Suez, as the prism of the canal will be exposed to a rain-fall of about 120 inches per annum, falling on enormous clay slopes, one of them over 400 feet in height.

At Nicaragua the length is 181½ miles, about 30 miles only of which is open water of full depth. The remainder is a dredged, excavated, embanked, or walled channel, with several locks to be maintained. The cost of towing sailing vessels through either canal will be considerably more expensive than hauling them on the Ship-Railway; and the cost of propelling a steamer by her own power will be, as has been previously shown, 3.0 mills per ton per mile, as against say 0.5 mill per ton per mile transported by the Ship-Railway.

The history of transportation in the last half century proves conclusively the vast superiority of the railway over the canal in speed, economy and convenience.

The inevitable development of the railway in the next half century will be as marvelous as in the past. These results will be obtained by improvements in the road-bed and its superstructure, in alignment, in the increase of load and power of the motors that haul it, and in lessening the expense of handling goods at stations and terminals.

All these advantages the ship-railway method possesses in a greater degree than an ordinary railway could ever expect to have.

The same causes that have dried up the beds of the ordinary canals, whenever railroads have come into competition with them, will produce similar results wherever ship-railways shall compete with ship canals.

George Stephenson set in motion forces that have already proven more beneficent factors in the world than his wildest fancies ever pictured; but those forces will yet produce results that will far outreach all that has been hitherto accomplished. We are but entering upon the era of cheap and rapid transportation. The principles that have proven most potent in the past, in developing the ordinary railway, and in reducing the cost of transportation, will be most efficiently applied in the ship-railway.

CHAPTER VI.

DISTANCES SAVED—TONNAGE EXPECTED—GOVERNMENT STATUS OF THE ENTERPRISE—BENEFITS TO THE UNITED STATES AND MEXICO DURING CONSTRUCTION—GENERAL RESULTS.

The following distance tables were computed by the United States Coast Survey, and show the great advantage of the Tehuantepec route over present routes :

TABLE OF COMPARATIVE DISTANCES IN STATUTE MILES.

	Total Distance.	Excess over Tehuantepec Route.
FROM NEW YORK TO HONG KONG.		
Via Cape Horn	20,379 miles.	8,777 miles.
Cape of Good Hope	16,945 “	5,343 “
Suez Canal	13,596 “	1,994 “
Panama R. R.	12,953 “	1,351 “
Isthmus of Tehuantepec	11,602 “	....
NEW YORK TO YOKOHAMA.		
Via Cape Horn	19,802 “	9,796 “
Cape of Good Hope	18,085 “	8,079 “
Suez Canal	15,527 “	5,521 “
Panama R. R.	11,256 “	1,250 “
Isthmus of Tehuantepec	10,006 “	....
NEW YORK TO AUCKLAND, N. Z.		
Via Suez Canal	16,871 “	7,447 “
Cape of Good Hope	16,719 “	7,295 “
Cape Horn	13,890 “	4,466 “
Panama R. R.	10,305 “	881 “
Isthmus of Tehuantepec	9,424 “	.... “
NEW YORK TO MELBOURNE.		
Via Cape Horn	15,215 “	4,150 “
Suez Canal	15,171 “	4,106 “
Cape of Good Hope	15,019 “	3,954 “
Panama R. R	11,826 “	761 “
Isthmus of Tehuantepec	11,065 “	.... “
NEW YORK TO HONOLULU.		
Via Cape Horn	15,826 “	9,163 “
Panama R. R.	7,939 “	1,276 “
Isthmus of Tehuantepec	6,663 “	.... “
NEW YORK TO SAN FRANCISCO.		
Via Cape Horn	15,687 “	10,797 “
Panama R. R	6,063 “	1,173 “
Isthmus of Tehuantepec	4,890 “	.... “
LIVERPOOL TO HONG KONG.		
Via Cape Horn	20,606 “	5,353 “
Panama R. R.	16,471 “	1,218 “
Cape of Good Hope	15,722 “	469 “
Isthmus of Tehuantepec	15,253 “	.... “

TABLE OF COMPARATIVE DISTANCES IN STATUTE MILES.

	Total Distance.	Excess over Tehuantepec Route.
LIVERPOOL TO YOKOHAMA.		
Via Cape Horn	19,400 miles.	5,945 miles.
Cape of Good Hope	17,653 "	4,198 "
Panama R. R.	14,540 "	1,085 "
Isthmus of Tehuantepec	13,455 "	.... "
LIVERPOOL TO AUCKLAND, N. Z.		
Via Cape of Good Hope	16,221 "	3,412 "
Suez Canal	14,645 "	1,836 "
Cape Horn	13,897 "	1,088 "
Panama R. R.	13,312 "	503 "
Isthmus of Tehuantepec	12,809 "	.... "
LIVERPOOL TO SAN FRANCISCO.		
Via Cape Horn	16,552 "	8,250 "
Panama R. R	8,885 "	609 "
Isthmus of Tehuantepec	8,276 "	.... "
NEW ORLEANS TO HONG KONG.		
Via Cape Horn	20,804 "	10,531 "
Cape of Good Hope	17,485 "	7,212 "
Suez Canal	15,108 "	4,835 "
Panama R. R	12,308 "	2,035 "
Isthmus of Tehuantepec.	10,273 "	.... "
NEW ORLEANS TO YOKOHAMA.		
Via Cape Horn	20,227 "	11,590 "
Cape of Good Hope	18,625 "	9,988 "
Suez Canal	17,039 "	8,402 "
Panama R. R.	10,611 "	1,974 "
Isthmus of Tehuantepec	8,637 "	... "
NEW ORLEANS TO AUCKLAND, N. Z.		
Via Suez Canal	18,381 "	10,286 "
Cape of Good Hope.	17,259 "	9,164 "
Cape Horn	14,314 "	6,219 "
Panama R. R.	9,659 "	1,564 "
Isthmus of Tehuantepec	8,095 "	.... "
NEW ORLEANS TO MELBOURNE.		
Via Suez Canal	16,683 "	6,947 "
Cape Horn	15,640 "	5,904 "
Cape of Good Hope	15,560 "	5,824 "
Panama R. R.	11,181 "	1,445 "
Isthmus of Tehuantepec	9,736 "	... "
NEW ORLEANS TO HONOLULU.		
Via Cape Horn	16,251 "	10,917 "
Panama R. R.	7,294 "	1,960 "
Isthmus of Tehuantepec	5,334 "	.... "
NEW ORLEANS TO SAN FRANCISCO.		
Via Cape Horn	16,112 "	12,551 "
Panama R R.	5,418 "	1,857 "
Isthmus of Tehuantepec.	3,561 "	.... "

TABLE OF COMPARATIVE DISTANCES IN STATUTE MILES.

	Total Distance.	Excess over Tehuantepec Route.
NEW YORK TO VALPARAISO.		
Via Cape Horn	10,051 miles.	3,682 miles.
Panama R. R	5,417 "	.... "
Isthmus of Tehuantepec	6,369 "	.... "
NEW ORLEANS TO VALPARAISO.		
Via Cape Horn	10,476 "	5,436 "
Panama R. R.	4,772 "	.... "
Isthmus of Tehuantepec	5,040 "	.... "

On these eighteen routes the aggregate saving in distance by the Tehuantepec Route is over 125,000 miles.

The sailing distances saved are about fifty per cent greater than those given in the tables, the latter being steamer distances.

The great advantage of this route is still more appreciated from the fact that it saves nearly *two and one-half months* time to nearly every vessel which now goes around Cape Horn, and about $*12,000* on the cargo.

During the last few years there have been made several estimates of the tonnage that may be expected to pass through a ship canal or over a ship railway. The following table is made up from information taken from reliable sources. It agrees very closely with that made in 1879 by the statisticians of the Panama Canal Congress:

Detailed Statement of Tonnage expected over the Ship-Railway in 1889.

ROUTES BY WHICH COMMERCE MOVES.	**Tons 1883.** Actual Tonnage carried by steam and sail on routes longer than via Tehuantepec.	**Tons 1889.** Estimated from ratio of increase of commerce on the routes from 1879 to 1883, and from new business to be developed.
1. Panama Railroad	77,958	60,000
2. U. S. Pacific Coast with Atlantic via Cape Horn	237,341	359,081
3. Atlantic ports with Countries west of Cape Horn	349,454	489,135
4. U. S. Pacific Coast with foreign Countries east of Cape Horn	1,423,737	2,135,605
5. European Countries with Countries west of Cape Horn, other than U. S	1,828,621	2,285,776
6. British Columbia (Pacific Coast) with Europe	125,000	235,000
7. Slow bulky freights now going over Transcontinental lines	400,000	600,000
8. Fifty per cent. of tonnage now going from Asiatic Countries to Europe via Cape of Good Hope	400,000	400,000
9. New trade to be developed by Ship Railway between Gulf Ports of U. S. and Mexico and Pacific Ocean	......	1,000,000
Total	4,842,111	7,564,597

This amount may not be realized immediately after the opening of the railway, but we are confident that it will be developed in a few years. It is safe to assume that at the outset the Ship-Railway will carry at least 3,000,000 tons which will probably increase to 6,000,000 within five years from the time of opening the railway for business. A special committee of the Board of Trade of San Francisco, in 1880, stated :

"Ten years since the estimated tonnage that would use the "American Interoceanic Canal was placed, by the best official "authority in the country, at 4,100,000 tons per annum. Careful "estimates made by your committee place it at 5,250,000 tons at "this time."

The following are the provisions of the Ship-Railway concession granted by the Mexican Republic to Mr. James B. Eads, May 28, 1881 :

It provides for the construction and operation, for ninety-nine years, of a ship-railway with its corresponding lines of telegraph across the Isthmus of Tehuantepec. The right of way is granted eight hundred metres wide (2624 feet, or nearly half a mile) across the Isthmus. This width is reduced in town lands to four hundred metres, and is increased where stations are necessary to sixteen hundred metres. The public lands within this belt are conceded gratis to the company. Full authority is given for the prompt condemnation of all private lands needed. Four thousand two hundred square kilometres of public lands, equal to a million acres, are granted in aid of the enterprise. The right is given to import, free of duty, all kinds of machinery, instruments, coal and materials necessary for the construction, operation and maintenance of the works during ninety-nine years.

Vessels, passengers, and merchandise in transit, will be free of all kinds of duties, general as well as local, during the time of the concession.

The property and capital invested in the enterprise, its bonds and shares of stock, are exempted from all taxation or contribution of any kind, except that of revenue stamps, the Constitution of Mexico prohibiting the release of the latter tax by Congress.

Authority is given to collect a maximum toll on each vessel, not exceeding five dollars per cubic metre, for each metre contained in a parallelopipedon, of which the dimensions shall be the greatest length and the greatest breadth of the vessel measured at the surface of the water, and her greatest immersed depth. This would be about $8.00 per ton on the cargo carried. For each passenger carried across, a sum not exceeding $15.00 may be charged.

Gold and silver and precious stones may be charged a maximum rate not greater than one per cent. of their value.

The right is granted to collect wharfage dues and tonnage dues, not exceeding $1.00 per registered ton.

The tariff of charges for telegrams, for a message of ten words, not counting date, direction and signature, is fifteen cents for one hundred kilometres (about 62 miles) in distance.

The vessels, troops, and all things belonging to the Mexican Government, including telegraph messages, shall be carried free.

Passage over the railway shall be open for all the vessels of all the nations not at war with Mexico, and the Republic binds itself not to close to ocean commerce, during the term of the concession, either of the two terminal ports of the ship-railway, one in the Gulf, the other in the Pacific, except in case of war.

The directors, agents, employes and workmen of the company shall be exempt during the whole period of the concession from all military or civil service, and considered as invested with all the exemptions and privileges granted to the employes and workmen of other railways in the Mexican Republic.

The company, which may be organized by the concessionaire, may exercise all rights, powers and privileges in relation to the issue of bonds and other guarantees, not in conflict with the laws of Mexico, and may enjoy any concession which it may obtain in Mexico or elsewhere, provided the same be not in conflict with the provisions of the concession.

The company is forbidden to sell, mortgage or alienate, to any foreign government or governments, any of their property or rights conveyed under this concession ; but in consideration of the magnitude of the work, the company may obtain aid from any foreign government, either in money or guarantees, and hypothecate the net revenues to it, and may transport its mails, ships, property and appurtenances, free of charges, and may reduce the tariffs on its commerce and the prices of passage, in such case making the same reduction to the commerce of Mexico.

In the event of failure on the part of the company to comply with any such stipulations made with a foreign government, such foreign government shall have the right to enforce its claims before the courts of Mexico, in accordance with the laws of Mexico, but in no case can such foreign government acquire the ownership of the works, or the rights emanating therefrom.

The concession provides that the company shall be Mexican, even though some, or all of its shareholders, be foreigners, and shall be subject exclusively to the jurisdiction of the tribunals of the Republic, in all matters of which the cause and action may take place within its territory ; and its shareholders, employes, or successors shall not be permitted to allege, with regard to title or property and other matters connected with the company, rights as foreigners under any pretext whatever. They shall have those rights, and the means of making them valid, which the laws of the Republic confer on its own citizens, and consequently not subject to interference on the part of foreign diplomatic agents.

Work on the railway shall commence within two years from May 1st, 1881, and shall be finished within twelve years from the same date, no obligation existing to construct any definite amount of the work during any particular year.

The following valuable provisions have recently been added to the concessions by the Mexican Government:

First: The Government of Mexico agrees to guarantee that one-third of the net revenue of the company for fifteen years after its railway is in successful operation shall amount to $1,250,000 per annum, and it gives the right to the company to secure a similar guarantee to the amount of $2,500,000 in addition, from one or more foreign governments which may be disposed to aid the enterprise. The net revenue in all cases shall be assumed as one-half of the gross receipts of the railway.

Second: Authority is given to the company to admit to the Board of Directors members appointed by the guaranteeing foreign government, to represent its interest, equal in number to those appointed by the Government of Mexico, namely: two-ninths of the whole number or four-ninths of the board on the part of the two governments. Provision is made that when the net revenue reaches a certain amount these government directors shall have the right to reduce the tariff of charges, and with the sanction of their respective governments establish lower rates.

Third: The Mexican Government also gives to the company the right to establish coaling stations at each end of the line for the supply of vessels in transit over the railway, with the right to import coal for this purpose free of duty.

Fourth: It extends the time for completing the railway two years beyond the terms of the original concession, or to 1894.

Fifth: It increases the original land grant one million seven hundred thousand acres, the total being two million seven hundred thousand, about one-half the area of the State of New Jersey.

A proposition to incorporate the "Atlantic and Pacific Ship-Railway Company," is now before the Congress of the United States. The following are its more important provisions:

The Government is asked to guarantee that two-thirds of the annual net revenue, for fifteen years after the railway is completed and in operation, shall amount to $2,500,000; the United States to make up any deficiency in this amount; the guarantee not to take effect until a vessel weighing, with cargo, 3000 tons has been taken from the water, transported over the railway at a speed of not less than six miles per hour, and launched in the harbor on the other side of the isthmus without injury to the railway or vessel;—this test to be made to the satisfaction of a commission appointed by the President of the United States. The amounts, if any, advanced under the guarantee are to be refunded to the Government out of the receipts of the railway; the Company to issue bonds binding itself to pay the sums advanced;

one-third the excess of annual net revenue over the amount of the guarantee to be paid by the Company to the Secretary of the Treasury. The amount advanced is, therefore, a reimbursable loan, for the payment of which the Government has security in the bonds of the Company and the receipts of the railway until the whole amount is refunded. The Company agrees to transport during the fifteen years, all Government vessels, property, mails and officials, and transmit all Government telegraphic messages, for the nominal gross annual sum of $500. The Company also agrees that, during thirty years after the completion of the railway, it will transport vessels belonging to the citizens of the United States, and registered under its laws, engaged in coast-wise commerce, for 75 per cent. of the regular tolls aud charges imposed upon the commerce of all other nations excepting Mexico. The United States is to have the right to be represented by two-ninths in the Board of Directors of the Company. When the annual net revenue shall exceed 10 per cent. of the total indebtedness, the Directors of the United States and Mexico may establish a tariff of reduced rates. The Company is prohibited from transporting any vessels of war, ammunition, troops, or contraband of war, of any nation at war with the United States or Mexico. The above proposition is thus seen to be in all its provisions fair and reasonable. For an obligation comparatively insignificant in amount, the United States will secure immense benefits to its commerce, its industries and its general welfare.

The beneficial effect upon the manufacturing industries of this country will be felt from the commencement of the work. There will be required in the construction of the railway over 10,000,000 feet of lumber ; 4,000 tons of iron bridges : 70,000 tons of steel rails, splices &c. ; 8,000 tons of steel in the docks and basins ; 12,000 tons in the carriages ; and 10,000 in the floating turn-tables ; besides a great variety of other materials and plant which can be drawn from this country. The benefits to Mexico will be the employment of probably 10,000 of the Isthmian population, who are robust, active and faithful laborers. The provision of the concession which permits all coal to be imported free of duty for the use of the railway and for supplying steamers in transit, will open a large and profitable market for the coal of Alabama, Indiana, Illinois, Kentucky, Tennessee and Pennsylvania. In conclusion, the company urge this government to encourage this great undertaking, confident of results grandly beneficial to our country.

The language of a memorial to the Senate and House of Representatives, presented by the Board of Trade of San Francisco, in 1880, is eminently appropriate in 1885 :

" Your memorialists therefore pray, that when an organization
" with proper guarantees applies to you for recognition and official
" encouragement, the Government of our country will assume the
" protection, and support with its moral influence, the execution of

" this great work, upon which so much depends. Your sanction
" and your encouragement will make this essentially an *American*
" *Enterprise*, and afford such a guarantee of success as will attract
" the capital of Europe to complement our own. Our coast, our
" country and the world are ready for this great and beneficent
" enterprise."

CHAPTER VII.

STRONG APPROVAL OF THE SHIP RAILWAY ROUTE AND METHOD, AND OF GOVERNMENTAL ENCOURAGEMENT, BY TWO COMMITTEES OF THE 46TH CONGRESS.

The conclusions of the Committee of the House of Representatives (46th Congress, 3d session, Report No. 372,) are given in the following unanimous Report of the Senate Committee of the same Congress.

The examinations of these two Committees were thorough and exhaustive. The testimony taken by them in favor of the practicability and economy of the Ship-Railway was from the highest sources. The proofs are convincing, and the conclusions of the Committee are irresistible.

The Committee on Commerce, to whom was referred the bill (S. No. 430, 46*th Congress,) to incorporate the Interoceanic Ship-Railway Company, and for other purposes, have had the same under consideration, and beg leave to submit the following report :*

The first question the committee considered was as to the practicability of constructing a railway for the purpose of transporting ships and their cargoes. The testimony before the committee conclusively demonstrates the fact that such a railway is entirely practicable, and that loaded vessels can be transported over the same with absolute safety and economy.

The committee does not consider it necessary to enter into the details of the proposition thus stated, but refers to the following testimony upon the subject, given by the most prominent and able engineers and naval architects in the world.

In the first place the committee would refer to the testimony of Sir Edward J. Reed, K. C. B., late chief constructor of the British navy, who, in passing through Washington, kindly appeared before the committee at its invitation, and gave it the benefit of his views. The statement of Sir Edward Reed will be found printed in full in the testimony taken before the committee. Specific reference will now be made only to some of the matters therein contained.

In one part of his statement he says:

> I have no hesitation in saying that the modern ships of to-day are vastly stronger everywhere than they were half a century ago, and that they are now, as a rule, perfectly capable of being docked in dry-docks with their cargoes on board. Of course, if they can be docked in a dry-dock (a graven and sunk dock,) they could be docked upon an iron lifting or hydraulic dock.

Again he says:

> I should like to say at first that, as a naval constructor, I have no fear whatever of a ship undergoing any strain in the process of lifting out of the water (as would be necessary in the case of a ship-railway,) that she is not liable to at present in ordinary docking. I would say, further, that I am quite sure that the processes of ordinary docking, as carried on in a vast number of private establishments, are very negligent and insufficient in comparison with those which would be adopted in the case of the hydraulic lifts connected with the proposed ship-railway.

In speaking of the docking of armor-clad ships upon the celebrated hydraulic docks at Bombay, Sir Edward says:

> Therefore to dock an armor-clad ship is really to dock a ship with the principal part of her cargo on board, and under very unfavorable conditions, because the cargo of an iron-clad may be said to consist of her armor chiefly, and that is all situated upon the extreme outside of her, and acts with great leverage as regards the keel, whereas an ordinary cargo is laid over the bottom of a ship, and is more or less equally distributed. This dock at Bombay has been in operation several years, and has docked her Majesty's ships several times, and some others, and there has been no sort of accident or complaint of any kind. On the contrary, everybody has been surprised to find that in no case has an accident occurred, whereas accidents in ordinary docks are not uncommon.

In speaking of the hydraulic docks at Malta, Sir Edward says:

> I have here a letter from the secretary of this hydraulic dock company giving a list of some of the vessels which have been docked with cargo on board. I will only pick out two or three of these. There is a vessel called the Volmer, of 1,531 gross tons, which went in with a cargo of 1,200 tons' weight. A ship of 2,134 tons' gross tonnage went on the dock with 1,700 tons of cargo aboard; a ship of 1,555 gross tons went into dock with 1,500 tons of cargo, and others of like proportion of cargo to the size of the ship.
>
> I would call attention to the fact that although ship-owners were at first afraid of docking ships in that way, with their cargoes on board, they have discovered by the experience of years that no sort of injury does result therefrom. The ships that are in the Indian trade now voluntarily employ these docks and go upon them with their cargoes on board for the purpose of getting their bottoms cleaned and coated on the voyage, instead of having to lie in a more expensive dock in London for the purpose.

Again he says :

I would not like to dwell longer upon what I believe is the perfect practicability of docking wooden or iron ships with cargoes if they are docked with care.

Again he says :

I would like to mention what I think would be the view which I would take of this question if I were an American citizen, even if there were doubts about the perfect security with which you could take some of your not very strong wooden vessels across the isthmus. I should say that the time had come when it would be worth the while of this country to take command of its own transit by such a route as this, or rather to give encouragement to it for the purpose of developing in America that which America ought to possess, namely, the means of conducting the transport of its own produce from one port to another.

* * * * * * *

I should say, as an American, if our ships are not adapted for this purpose at present, let them be made so.

* * * * * * *

It would be very improper for me to press the adoption of this system upon gentlemen like you, because to tell the truth, I am not anxious that it should be adopted in the form in which Captain Eads put it. Looking to the enormous shipping interest which we have (we are 60 per cent. now in England of the carrying power of the world), I am quite satisfied that this enterprise can be dealt with by British ship-owners and capitalists, and I am quite sure also that when dealt with in the present day, and with interests of the kind we now have at home, they would obtain the protection of the government for their enterprise. The premium of having half rates for the whole British shipping passing over that isthmus would be so great a temptation that I would like myself to get Captain Eads to come over and ask us to take this thing up. But, however, as an American enterprise, I think it has great merit, and cannot fail, if constructed under the auspices of the United States Government, to greatly benefit your commerce.

Again, in speaking of the allegation made by some that in the transportation of ships by railway there would be much jerking and vibration, which would be liable to cause damage, Sir Edward says :

They seem to think there are some vibrations or jerking, or forces of some kind the ship would be subjected to on the railway that she is not subjected to at sea. That feeling, I know, is a pretty general one. I can only attribute it to the fact that the gentlemen who so think are not acquainted with the strains that ships undergo at sea.

Again he says :

The next thing I would say is that we have ships on railways, and we have them in the worst form. Nothing is commoner than heaving up slips upon which ships are pulled up out of the water. They have to take their bearing first at the bow, and gradually come up until they get upon the solid, and are then hauled up by chains.

That has been done everywhere, all over the world, thousands of times in this country, and it is now carried on to a very large extent indeed. With docks for ships of 3,000 or 4,000 tons, nothing is thought of pulling these ships up, and nothing is thought of any strains they undergo under the circumstances.

In speaking of the liability of ships while in transit to be blown over by violent storms, Sir Edward says :

> If it is sufficient on a ship-railway to provide against something like the worst hurricanes at sea, then I have no hesitation in saying that it is perfectly impossible for these ships on the railway to come to any grief from wind, because the resistance to hold the ship upright on her cradle on the railway track is, I think, very many times greater than the forces which keep her upright at sea.

After speaking of the track and locomotives which would be required for the ship-railway, Sir Edward says :

> With a track like that, and with locomotives adapted to it, there would be no difficulty in transporting ships. It would be best to avoid a very high rate of speed. It would not be necessary, I should think, to move these ships at a greater speed than eight or ten miles an hour, although I am quite prepared to believe that, with a proper track and locomotives, vessels could be transported very much faster. I think the ship-railway would be likely to develop as much as the ordinary railway has done, and create as many surprises ; but in any case I cannot, for the life of me, understand where is to enter in the danger to a ship upon a car traversing a road such as may be made and would be made for this purpose. I have searched for it in vain, and I cannot find the element of danger.

In answer to inquiries in relation to the economy of the ship-railway as compared with a canal, Sir Edward said :

> I have made some calculations as to the weight of the car and the weight of the ship, but as those calculations are set forth in a letter, which, perhaps, the committee may do me the honor of reading, I should not like to go back upon memory for those figures.

In the letter to which he refers, Sir Edward says :

> As regards the comparative economy of transporting a ship's cargo by canal or railway, I am inclined to believe that the railway would prove the more economical of the two.
>
> It was stated in evidence before a committee of the House of Commons, by the chairman of the Great Eastern Railway Company, on the 7th March, 1878, that coals could be profitably transported by this company at the rate of ¼d per ton per mile ; and this was confirmed by the locomotive superintendent of the Northwestern Railway, on the 21st of March, 1878. If we assume that the total distance to be hauled across the Isthmus of Tehuantepec is 150 miles, it would appear that a ship's cargo can be profitably carried for that distance, in the ship, over a first-class railway, for $0.75 per ton. I arrive at this conclusion from the following considerations : 1st, ¼d, or one-half cent, per mile gives $0.75 per 150 miles ; and 2d, the weight of the ship and car upon which she is transported appears to bear about the same ratio to the cargo carried in the ship when fully loaded, that the weight of the coal-car bears to the weight of coals it carries. It was also stated in evidence, on the occasion above referred to, that the weight of coal carried on one truck is 7¾ tons, and the weight of the truck 4½ tons. The paying load is, therefore, about 58 per cent. of the total ; and this is about the proportion that the cargo would bear, in many ships, to the total weight of the ship, car, and cargo. These facts are sufficient to show that the transport by ship-railway, over a first-class road with easy gradients, in a country where fuel is abundant and labor not excessively dear, ought to be about the same per ton per mile, for the cargo carried, as in England. If, however, we assume it to be twice as expensive, the rate would then be $1.50 per ton across the Isthmus of Tehuantepec. I am credibly informed that at this time $20 per ton is being paid for the transport of grain from California, round Cape Horn, to Liverpool.

It should be borne in mind that there are two elements in the ship-railway plan proposed by Captain Eads which tend to greater economy than is obtained in the railway system of England: 1st, the ship-railway will be devoid of all curves; and, 2d, the cargo transported will be handled wholly by machinery, and in vast bulk.

The committee will not, however, occupy more time in quoting from the testimony of Sir Edward J. Reed. The whole of that testimony is very valuable and instructive, and will well repay perusal. But the question of the practicability of a ship-railway does not depend alone upon the testimony of one engineer, however distinguished. Mr. Eads submitted to the committee a number of letters and certificates from the most distinguished engineers and naval architects abroad and in this country. Attention is called to the following extracts from some of these certificates and letters.

Nathaniel Barnaby, C. B., present chief constructor of the British navy, in a letter dated London, October 8, 1881, says:

> I note, therefore, the question you wish to put to me, which is: "Do I think the problem insoluble of constructing a car on which a fully loaded ship can be safely transported over such a railway as could be built through a tolerably level country?"
>
> In reply to this, I say not only that it is soluble, but that the solution is, in my opinion, fairly indicated in your plans, as laid before the committee on interoceanic canals and shown to me.
>
> Ships which would be strained by ordinary docking would be liable to be strained also when suspended on a car not specially designed for their crazy condition, but such ships would be still more strained in their ordinary sea passages.

Mr. William John, who was for some years the scientific adviser of the committee of Lloyd's Register of British Shipping, London, and who built the Inman steam liner the City of Rome, in a letter dated October 6, 1881, says:

> The practice of lifting a ship of large size clean out of the water has become an every-day occurrence. The further step of lifting her to a considerable height is not a great one, especially if you can start with her floating in a considerable depth of water. Beyond these the conveyance of her over a railway, provided the latter is moderately level and moderately straight, is a simple matter, which is certainly not outside the reach of civil engineers.

Mr. John Fowler, who was consulting engineer of the Egyptian Government, engineer in chief of the Metropolitan (underground) Railway of London, and who is a past president of the Institute of Engineers in England, says:

> You will be interested to know that about eight years ago, when acting as consulting engineer to the Egyptian Porte, I was instructed to prepare a project for the transport of steamers and other vessels from one level to the other at the first cataract of the Nile.
>
> After a very careful investigation of the alternative plans of canal and ship-railway on the spot, I decided in favor of the railway, having satisfied myself that there was no mechanical difficulty in carrying ships of any size, without injury to themselves, on a properly designed car or cradle over a solidly constructed railway.

Mr. George Fosbury Lyster, a member of the Institute of Civil

Engineers, in England, and engineer in chief of the Liverpool docks, in a letter dated November 2, 1881, says:

> In reply to your letter of the 16th ult., referring to the several interviews I have had with you during your recent visit to this country, on the interesting subject of your proposed ship-railway across the Isthmus of Tehuantepec, as also to the papers which you were good enough to leave with me, further illustrating your opinions on the point, I have now been able to give the whole matter, as far as its engineering features are concerned, very careful consideration, and have concluded that if the permanent way, cradle arrangements, and general details are carried out in the ingenious and substantial manner you described, there will, in my judgment, be little or no difficulty in transporting properly constructed ships from sea to sea with entire convenience and safety.

Mr. E. Leader Williams, a member of the Institute of Civil Engineers in England, in a letter dated September 5, 1881, says:

> I believe that your ship-railway only requires carrying out into execution to prove most successful in every way.

The firm of Clark & Standfield, distinguished English civil engineers, one of the members of the firm (Mr. Edwin Clark) having been the chief assistant of Robert Stephenson in building the celebrated tubular bridge over the Menai Straits, and who introduced the hydraulic vertical-lift system, in a letter to Mr. Eads, dated London, September 6, 1881, says:

> Referring to our interview on the subject of the proposed ship-railway across the American isthmus, we now beg to say that our works are likely to be so much occupied during the next year that we should scarcely be in a position to execute any works out of England in connection with the proposed railway, but we should be very happy to prepare the drawings for the construction of the terminal works, for lifting the vessels at the Atlantic and Pacific Ports.
>
> We understand it will be requisite to transport loaded vessels of the weight of 4,000 to 6,000 tons, more or less, on the railway, at the rate of about six miles per hour, on a gradient of one or two per cent., and that it will be required to raise the vessels on a railway car out of the water to a variable height, not exceeding 46 feet, and deposit them on the rails in a time not exceeding thirty minutes. These conditions may be fulfilled in two different ways, and we need not say that it is a plan in which Mr. Edwin Clark has entire confidence, and in which he will take the fullest interest in arranging the details. The hydraulic system would probably be the most rapid, but probably the more costly. At the Bombay hydraulic dock we have lifted weights up to 12,000 tons, with 72 presses, 14 inches diameter, and 36 feet stroke. The Victoria and Malta hydraulic docks have been many years in constant operation.
>
> At the canal lift at Fontinettes we employ presses with rams, 6 feet 7 inches in diameter, with a 50-feet stroke. Each of these presses will raise a dead weight of 1,000 tons through a height of about 50 feet in three minutes. The weight is a movable portion of the canal, about 132 feet long, containing the water and a barge floating in it. This work is now in course of construction for the French Government, and it is to be erected near St. Omer, in France, and we are now designing a set of four similar canal lifts for the Belgian Government, in which the weight raised will be somewhat larger. It is evident that a few presses such as these would more than accomplish the work required.
>
> Our ordinary depositing dock, similar to that at Sebastopol, which raises vessels of 6,000 tons, would also meet the requirements of the case very satisfactorily. We are now constructing a second of these docks, of 10,000 tons, for the Russian Government at Vladivostok, and a third, of 3,000

tons, for the Barrow and Railway Company, at Barrow-in-Furness, to be afterwards increased to 5,000 tons. We have designed one of these docks for the Italian Government, to raise ironclads of 15,000 tons' weight with a lift of 30 feet. There would be no difficulty in modifying the proportions so as to render it suitable for a lift 46 feet, and this form of dock raises the vessels out of the water and deposits them on a gridiron stage in a most convenient manner for railway transport.

It will probably depend to a great extent on their relative cost as to which of these systems may be adopted, and we shall be prepared at any time to go into the necessary calculations, and render every assistance in our power towards the accomplishment of the great work in which you are engaged.

We apprehend no difficulty in perfecting the necessary details of the plans so as to insure the safe transportation of the largest loaded ships on the railway cars with absolute safety.

The firm of Emerson, Murgotroyd & Co., who were the constructors of the hydraulic docks at Malta and Bombay, say, in a letter dated October, 1881 :

James B. Eads, Esq., *C. E.* :

My Dear Sir : When you are ready to commence the construction of your ship-railway, we shall be pleased to undertake the building and completion of the necessary works for placing the ship, with her cargo, on the railway track, ready for attaching the locomotives to her, and after transport across the isthmus to lower her safely again until she is afloat. A lifting apparatus will be required at each side of the isthmus which will lift or lower ships as required. This portion of the work we are fully prepared to execute with the greatest promptness, on the same terms on which we built the hydraulic docks at Bombay and Malta, and the Anderton Canal Lift in Cheshire.

We have no hesitation in guaranteeing the lifting of a fully-loaded ship or steamer of 8,000 or 10,000 tons' weight on a railway car from the sea or harbor level to that of your permanent way in thirty minutes, with absolute safety to the ship and the works, where the lift is not over fifty feet vertically. We will undertake to construct all the plans and works necessary to do this at each end of your line, and complete everything ready for attaching the locomotive to the car on which the ship is to be lifted and transported ; this car, or any number of them, we will furnish also.

The locomotives and railway construction are not in our line ; but if it were a matter of importance to cover, in addition, the construction of the locomotives, turn-tables, &c., and ten miles of railway, as proposed by you to the United States, we have no doubt we could unite with us some other responsible parties engaged in that kind of works, to execute them and guarantee the safe transportation of the loaded ships of the weight mentioned, over the railway.

Mr. William Pierce, sole proprietor of John Elder & Company's works, Govan, Glasgow, and who built the Arizona, the Elbe, the Alaska, and others of the largest and finest steamers afloat, in a letter dated August 26, 1881, says :

I am of the opinion, from what I know of the working of iron floating docks that I have designed and built, that iron steamers of 4,000 to 5,000 tons' displacement may be docked loaded, without any injury whatever.

It is also my opinion that a ship-railway for vessels of this size may be constructed and worked successfully, provided the land is solid and the line moderately level.

Captain Edward Hartt, United States Naval Constructor, says, in a letter dated Orange, N. J., January 22, 1881 :

With a substantial road-bed for your railway, on the easy grades across

Tehuantepec, which, I understand, do not exceed one or two feet in the hundred, there can be no mechanical difficulty in the way of transporting loaded ships by railroad with entire safety to the vessel, whether they be built of wood or iron.

Mr. H. L. Fernald, another constructor in the United States Navy, says:

Having carefully examined the plans and papers pertaining to your proposed ship-railway across the Isthmus of Tehuantepec, I do not hesitate to say that, in my judgment, there will be no difficulty whatever in transporting, in the manner you propose, any properly built vessel with absolute safety.

Gen. Q. A. Gilmore, of the United States Engineers, says:

In my judgment the construction of a ship-railway across the Mexican Isthmus, in general accordance with your plan, is not only feasible as an engineering problem, but the successful maintenance and operation of such a road is entirely practicable as a business enterprise.

Major Charles R. Suter, of the United States Engineers, says:

The project has great and obvious advantages to recommend it; and from an engineering point of view, it is, in my opinion, perfectly practicable.

Professor E. A. Fuertes, dean of the department of civil engineering in Cornell University, and chief engineer in the survey made by Commodore Schufeldt, of the Isthmus of Tehuantepec, and who was for eleven months upon the Isthmus, says:

When your ship-railway project appeared, and was ridiculed by inconsiderate engineers, I made computations which proved conclusively to my mind that the Great Eastern could be carried safely overland upon rails with less strain to her timbers than in any of her sea voyages.

Again, in speaking of the grades which would be encountered upon the Isthmus of Tehuantepec, Professor Fuertes says:

I can assure you, upon knowledge of every inch of the ground, that you will find no difficulty about curves, grades or bridges. The ascent of the Atlantic slope will offer no more difficulties than the Hudson River Railroad, and on the Pacific side, either one of three passes in the neighborhood of Tarifa or Chivela will allow of no steeper grade than twenty-five to thirty-five feet per mile to bring you down to the Pacific Plains. The ground offers you fifty miles to get down in, and as much more as you may wish by following the hillside. All the bridges required will be of comparatively short spans. You will find very little anxious work on either terminal harbor, very little tentative work being required, and permanence without ulterior complications will reward almost any kind of attack. The drainage of the works, building materials (including excellent cement yielding dolomitic limestone, between San Miguel and Tarifa), abundant native labor, a remarkably healthy climate, &c., will be all you may desire.

Don Francisco de Garay, whom the French Government made a member of the legion of honor in recognition of his abilities as a civil engineer, and who was detailed by the Mexican Government (he being the engineer of the valley of Mexico), to make a survey of the Isthmus after the concession was granted to Mr. Eads, in a report to Mr. Eads, dated Mexico, September 22, 1881, says:

Now with regard to grades: I have no grade on my line above two per cent. and for no greater distance than two and a half miles. The ascent to the summit, as well as the descent, are constant, but divided in different short sections.

To resume what we have said, we see :

1st. That the line traced and located by our commission for the present is only a study that may be improved and perhaps even abandoned for a better line, if, in subsequent surveys more favorable ground is found.

2d. That such, as it has been traced and located, the line from the Pacific to the Chichihua River has only one break in a distance of fifty miles

3d. That in all the line there is no grade greater than two per cent., and in no greater distance than two and a half miles.

4th. That the greatest cutting is 312 feet in maximum depth, and 2,500 feet in length.

5th. And, finally, that the results obtained have demonstrated the entire practicability of the ship-railway.

General G. T. Beauregard, formerly of the United States Engineer Corps, says :

I take pleasure in communicating to you, in as few words as possible, my views relative to the practicability and economy of a ship-railway across the Isthmus of Tehuantepec. I feel no hesitancy in saying that I see no difficulty in constructing a railway strong enough to carry out the object referred to. It is only a question of the strength of the cradle to hold the ship, and the division of weight on a sufficient number of rails and wheels, which can certainly be accomplished by any engineer of ability and ingenuity.

As to the danger a loaded ship would incur in being transported on a smooth and well-built railway, it is all imaginary, for it would be well-braced and cushioned in a strong car or platform, supported by spiral steel springs on a very large number of wheels, which, being separate from each other, could be easily replaced if broken during the trip. Moreover, the breaking of one or a few of them out of so many would not endanger the rest.

With regard to the economy of such a ship-railway, I would remark that the tonnage carried over it being moved entirely by machinery, and the ratio of paying cargo to dead weight being much greater than that on ordinary railroads, the cost of operating such a railway must be much less. The cost of maintenance should also be less in proportion, for the road would be substantially built and short in comparison to the amount of tonnage carried over it. Moreover, the machinery used should be simple and substantially made. It is, therefore, safe to assume that the current expenses and those of maintenance would not exceed fifty per cent. of the gross receipts, which would be more profitable than from a canal costing probably two or three times more than a ship-railway, and requiring three or four times longer to build, thereby increasing greatly the amount of interest alone on the actual cost of the canal.

A ship-railway has other important advantages over a canal, such as the facility with which the number of trucks could be increased to accommodate the demands of commerce ; the rapidity of transit and the greater number of vessels per day that could be transported than through a canal ; the practicability of building a railway where a canal would be impossible the ability of estimating correctly for the first, while the latter if partially built under the water, or liable to be submerged or interrupted by water, would be very difficult, if not impossible, to be estimated for as to cost and time of completion.

Mr. H. D. Whitcomb, civil engineer in charge of the works for improvement of the James River, says :

The idea is worthy of the age, and to make it a success you have simply to improve and expand the details of the old marine railway and make it more perfect. I have the greatest confidence in your ability in this particular, and hope you will have the opportunity to demonstrate it.

Mr. William F. Buckley, president of the New York Balanced Dock Company, in a letter to Mr. Eads, dated February 14, 1881, gives the following list of vessels taken out on his dock with cargoes in them :

> Ship Great Victoria 2,386 tons ; ship Triumphant, 2,046 tons; ship America, 2,054 tons ; ship Hagerstown, 1,903 tons ; ship S. C. Blanchard, 1,903 tons ; steamer Colorado, 2,765 tons ; steamer Rio Grande 2,565 tons ; steamer Thingvalla, 2,436 tons ; steamer Monarch, 2,366 tons ; steamer Lepanto, 2,310 tons ; steamer State of Nevada, 2,488 tons.

And says :

> We do not refuse any class of ships or steamers, even with their coals and cargoes on board, whose length does not exceed the length of the dock. In every case in which we have taken up steamers with cargoes in, it has been done without the least strain or injury to the vessel. As the rule is to make a charge for raising cargo in the vessel, they usually come without cargo.

The above are some of the witnesses as to the entire practicability of a ship-railway. There are many others of equal distinction in their profession who have expressed the same views, but the committee does not consider that it is necessary to quote further. The testimony upon this subject is so overwhelming and conclusive in its character that the committee has no hesitation in reporting that the construction of a ship-railway and its successful operation are entirely practicable.

But even if there were doubt as to the practicability of a ship-railway, the Government of the United States could with perfect safety to itself pass the bill desired by Mr. Eads, because under the provisions of that bill the Government guarantee cannot attach or have any force or effect until the practicability of the project shall have been fully and satisfactorily demonstrated.

The next question arising is as to the best route for a transit-way for vessels across the Isthmus. During the third session of the Forty-sixth Congress a special committee of the House of Representatives charged with the duty of considering all questions relating to Isthmian transit, after the most full and exhaustive investigation, reported in favor of Mr. Eads' ship-railway project, and selected Tehuantepec as by all means the most preferable route for the transit-way. In this report the committee say :

> Mr. Eads has selected the Isthmus of Tehuantepec, and your committee unhesitatingly finds and reports that, of all the routes across the isthmus, Tehuantepec is essentially the American route. A glance at the map will at once demonstrate the correctness of this assertion. If a vessel leaving the mouth of the Mississippi river bound for California or the Orient, cross the isthmus at Tehuantepec, her voyage will be 1,250 miles shorter in distance than if she crossed at Nicaragua, and 2,200 miles shorter than if she crossed at Panama. If a vessel leaving New York, bound for the same destination, cross the Isthmus of Tehuantepec, her voyage will be 750 miles shorter than if she went by Nicaragua, and 1,250 miles shorter than if she went by Panama. Inasmuch as this large saving of distance

chiefly affects only the commerce of this country and that of Mexico, and not the commerce of Europe, it must be at once apparent that the location of a transit-way at Tehuantepec is of vital importance to the commercial interests of the United States.

The saving of distance is synonymous with cheap transportation. Both at Panama and Nicaragua, at various periods throughout the year, calms prevail to an extent which would greatly decrease the value of either of the routes for sailing vessels. Such, however, is not the case at Tehuantepec, as favorable winds always prevail there, thus affording a guarantee of no serious detention to sailing vessels seeking a passage by that route.

The committee has considered the testimony taken before the House committee, and fully indorse the statement that Tehuantepec is the American route, and that the transit-way should by all means be located there in preference to any other point upon the Isthmus.

* * * * * * * * *

Without going into further details, the committee are of opinion that the concession is all that could be desired by our government, The special committee of the House, before referred to, after enumerating in its report some of the details of the concession, says :

> In the opinion of your committee, it would be a great mistake for the Government of the United States to fail to recognize, in a substantial way, the overtures thus made by Mexico. The duty of our Government in the premises is a plain one, whether viewed from a selfish or unselfish standpoint. If viewed in the former light, it must be apparent to any one at all familiar with the enormous commercial interests which will be affected by the great work proposed that any liberality exercised by our Government will be returned a hundred fold in the increased benefits resulting to our commerce. Of the valuable and growing commerce of Mexico the United States now enjoys but 5 per cent. ; 95 per cent. of it is enjoyed by other nations. The markets of Mexico are to-day practically closed to the products of our soil and industry, while there is no good reason that they should not be open to both.
>
> The combined commerce of British India, Australia, China, Hong-Kong, Peru, New Zealand, Chili, Japan, the Philippine Islands, Tasmania, and the Hawaiian Islands amounts to $1,425,953,000 annually. Of this vast commerce the United States only enjoys 4 per cent., and the Mississippi Valley, comprising a territory equal in extent to six-tenths of the total area of the thirty-eight States of the Union, is wholly debarred therefrom. An increase of our trade, nearly doubling it in this quarter, would more than compensate the United States for the guarantee asked by Mr. Eads.
>
> Leaving out of view the question of interest, it would scarcely be consistent with the dignity and magnanimity of as great a country as ours to reject the friendly proffers of a sister republic, and refuse to lend any assistance to a great work like that proposed ; especially so in view of the revived fraternal feeling now existing there towards us.

* * * * * * * * *

Believing that the commercial interests of this country will be largely benefited by the construction of a ship-railway, that it will have a tendency to infuse new life into our now languishing commerce, and that it is essential that if our government would retain the respect of its own people and of foreign nations, that it should now practically demonstrate its determination to forever discourage foreign control upon this continent, the committee report back the bill favorably, with certain amendments, and with the recommendation that it do pass.

6

SIXTEENTH

ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Atchison, Topeka and Santa Fé Railroad Co.

TO

THE STOCKHOLDERS

FOR THE

YEAR ENDING DECEMBER 31, 1887.

BOSTON:
PRESS OF GEO. H. ELLIS, 141 FRANKLIN STREET.
1888.

CALIFORNIA STATE LIBRARY

SIXTEENTH

ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Atchison, Topeka and Santa Fé Railroad Co.

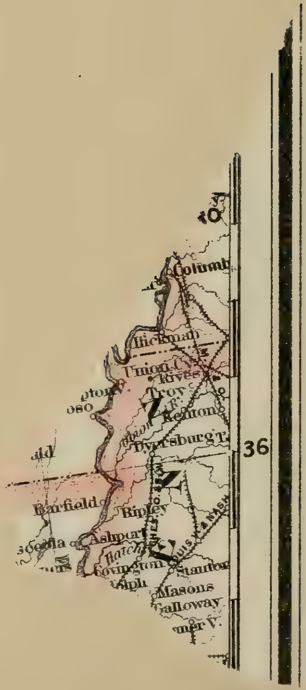
TO

THE STOCKHOLDERS

FOR THE

YEAR ENDING DECEMBER 31, 1887.

BOSTON:
PRESS OF GEO. H. ELLIS, 141 FRANKLIN STREET.
1888.


Columb
Hickman
Union C
Rives
Troy
Kenton
Dyersburg
36
Barfield
Ripley
Ashport
Covington
Stanton
Masons
Galloway

DIRECTORS AND OFFICERS

OF THE

Atchison, Topeka and Santa Fé Railroad Company.

DECEMBER 31, 1887.

DIRECTORS.

I. T. BURR,	BOSTON, MASS.
B. P. CHENEY,	" "
C. R. CODMAN,	" "
C. K. HOLLIDAY,	TOPEKA, KAN.
A. W. NICKERSON,	BOSTON, MASS.
E. B. PURCELL,	MANHATTAN, KAN.
WARREN SAWYER,	BOSTON, MASS.
GEO. SEALY,	GALVESTON, TEX.
L. SEVERY,	READING, KAN.
GEO. O. SHATTUCK,	BOSTON, MASS.
ALDEN SPEARE,	" "
W. B. STRONG,	" "
W. F. WHARTON,	" "

GENERAL OFFICERS.

WM. B. STRONG, *President,*	BOSTON, MASS.
C. W. SMITH, *First Vice-President,*	CHICAGO, ILL.
A. A. ROBINSON, *Second Vice-President,*	TOPEKA, KAN.
GEO. R. PECK, *General Solicitor,*	" "
GEO. W. McCRARY, *General Counsel,*	KANSAS CITY, MO.
E. WILDER, *Secretary and Treasurer,*	TOPEKA, KAN.
GEO. L. GOODWIN, *Ass't Secretary and Ass't Treasurer,*	BOSTON, MASS.
JNO. P. WHITEHEAD, *Comptroller and General Auditor,*	" "
ALFRED A. GLASIER, *Transfer Agent,*	" "

OFFICERS ON THE LINE.

C. W. SMITH, *First Vice-President,*	CHICAGO, ILL.
A. A. ROBINSON, *Second Vice-President and Chief Engineer,*	TOPEKA, KAN.
E. WILDER, *Secretary and Treasurer,*	" "
GEO. R. PECK, *General Solicitor,*	" "
J. F. GODDARD, *General Manager,*	" "
GEO. L. SANDS, *General Superintendent,*	" "
H. C. CLEMENTS, *Auditor,*	" "
A. S. JOHNSON, *Tax and Land Commissioner,*	" "
A. C. ARMSTRONG, *Purchasing Agent,*	" "

MILEAGE OF THE ATCHISON, TOPEKA & SANTA FÉ RAILROAD AND AUXILIARY ROADS, DEC. 31, 1887.

I. ATCHISON SYSTEM:—		*Miles*
Atchison, Topeka & Santa Fé R.R.:		
Atchison to western boundary of Kansas, .		470.58
Kansas City, Topeka & Western R.R.:		
Kansas City to Topeka (exclusive of 4.10 miles of second track between Kansas City and Argentine), ...		66.32
Leavenworth, Northern & Southern Railway:		
Wilder (on K. C., T. & W. R.R.) to Cummings Junction (on A., T. & S. F. R.R.), . . .		46.19
Kansas City, Emporia & Southern Railway:		
Emporia to Moline, ...		84.27
Florence, Eldorado & Walnut Valley R.R.:		
Florence to Winfield, ...		72.73
Marion & McPherson Railway:		
Florence to Ellinwood, ...		98.61
Wichita & South-western Railway:		
Newton to Arkansas River, ...	79.16	
Mulvane to Caldwell, including extension at Wellington, ...	42.67	
Sedgwick to Halstead, ...	8.89	130.72
Pueblo & Arkansas Valley Railroad:		
Kansas State Line to South Pueblo, . . .	148.72	
South Pueblo to Cañon City, ...	40.27	
Branches to coal mines, ...	7.08	
La Junta to New Mexico State Line, . . .	96.37	292.44
Denver & Santa Fé Railway:		
South Pueblo to Denver, including Circle Road in Denver, ...		124.27
New Mexico & Southern Pacific Railroad:		
New Mexico State Line to San Marcial, . .	353.97	
Santa Fé Branch, ...	18.12	372.09
Rio Grande, Mexico & Pacific Railroad:		
San Marcial to Deming, ...	129.04	
Rincon to Texas State Line, ...	57.04	186.08
Silver City, Deming & Pacific Railroad:		
Deming to Silver City, ...		48.29
Rio Grande & El Paso Railroad:		
Texas State Line to El Paso, ...		20.15
New Mexican Railroad:		
Socorro to Magdalena, ...	30.96	
Nutt to Lake Valley, ...	13.31	
San Antonio to Carthage, ...	9.64	
Las Vegas to Hot Springs, ...	8.27	
Dillon Junction to Blossburg, ...	5.93	68.11
Total Atchison System, ...		2,080.85
II. SOUTHERN KANSAS SYSTEM:—		
Holliday, Kan., to Panhandle City, Texas, .	545.64	
Lawrence Junction to Lawrence, ...	25.80	
Ottawa to Emporia, ...	56.42	
Burlington Junction to Burlington, . . .	42.21	
Chanute to Pittsburg, ...	55.46	
Cherryvale to Coffeyville, ...	16.30	
Arkansas City, Kan., to Purcell, Ind. Ter., .	154.06	
Wellington to Hunnewell, ...	18.35	
Attica to Medicine Lodge, ...	21.26	
Total Southern Kansas System, ...		935.50
Total Atchison and Southern Kansas Systems, . . .		3,016.35

III. SONORA SYSTEM:—	*Miles*
New Mexico & Arizona Railroad:	
Benson to Nogales (on Mexican boundary),	87.78
Sonora Railway:	
Nogales to Guaymas (Mexico),	262.41
Total Sonora System,	350.19

IV. OWNED JOINTLY WITH OTHER RAILROAD COMPANIES:—	
Leavenworth, Topeka & South-western Railway:	
Leavenworth to Meriden Junction,	46.30
Manhattan, Alma & Burlingame Railway:	
Burlingame to Manhattan,	56.62
Wichita & Western Railroad:	
Wichita to Kingman,	44.93
Kingman, Pratt & Western Railroad:	
Kingman to west line Kiowa County,	79.71
Total owned jointly,	227.56

SUMMARY.

Atchison System,	2,080.85		
Southern Kansas System,	935.50	3,016.35	
Sonora System,		350.19	
Owned jointly (one-half mileage),		113.78	3,480.32

In addition to the above, the Atchison Company either owns entirely or controls the following mileage:—

Chicago, Santa Fé & California Railway:			
Main line, Chicago to Kansas City,	439.94		
Branch to Pekin, Ill. (including 5.91 miles leased),	58.31	498.25	
St. Joseph & St. Louis R.R., Lexington Junction to St. Joseph, and St. Joseph & Santa Fé R.R., St. Joseph to Winthrop (opposite Atchison), since consolidated into the St. Joseph, St. Louis & Santa Fé Railway,		95.70	
St. Louis, Kansas City & Colorado R.R.:			
St. Louis to Union and branch (including 4.50 miles leased),		61.40	
Chicago, Kansas & Western lines (all in Kansas),		903.16	
Gulf, Colorado & Santa Fé Railway,		1,022.16	
California Southern Railroad,		210.61	
California Central Railway,		183.55	2,974.83
And controls jointly with the St. Louis & San Francisco Railway Co. the Atlantic & Pacific Railroad,			918.86

OFFICE OF THE PRESIDENT

Atchison, Topeka and Santa Fé Railroad Company.

95 MILK STREET, BOSTON.

Boston, April 21, 1888.

To the Stockholders of the Atchison, Topeka & Santa Fé Railroad Company: —

Your Directors submit the following report of the operations of the Company for the year ending Dec. 31, 1887.

On the two preceding pages will be found the mileage of the roads owned wholly or in part by this Company at the close of the year.

For the reasons stated in previous annual reports, the parent road and its auxiliaries, called the Atchison System, with a mileage in Missouri, Kansas, Colorado, New Mexico, and Texas of 2,080.85 miles, and the Southern Kansas System in Kansas, Indian Territory, and Texas of 935.50 miles, will be considered as one property; and the following statements relate to the two systems accordingly. These are followed by the reports of the Land Department, Sonora System, and the roads owned jointly by the Atchison Company with the Union Pacific and the St. Louis & San Francisco Railway Companies; and a general summary of these is added, showing the results for the year to the Atchison Company.

EARNINGS AND EXPENSES OF THE ATCHISON AND SOUTHERN KANSAS SYSTEMS.

The gross earnings were: —

From Freight,		$12,248,343.77	
Passengers,		5,136,651.81	
Mail and Express,		745,459.02	
Miscellaneous Sources,		330,911.66	
Total,		$18,461,366.26	
Operating Expenses,	$9,857,291.07		
Taxes,	551,163.71		
		10,408,454.78	
Leaving Net Earnings for the year,			$8,052,911.48

To these net earnings should be added the following additional receipts for the year 1887: —

From various Companies for track rentals,	$29,953.14	
Net Land Receipts of The So. Kansas Railway Company,	33,350.49	
Sundry Profits,	553,386.31	
Balance of General Interest Account for the year,	164,416.10	781,106.04
		$8,834,017.52

From which deduct: —

Payments to St. L. & S. F. R'y Co. under Agreement of Oct. 5, 1886,	$192,787.35	
Rebate of 10% allowed to C. K. & W. R.R. Co. on earnings from Interchanged business,	64,589.26	257,376.61
		$8,576,640.91

From these receipts, the following fixed charges have been paid or are payable: —

Interest on the various issues of A., T. & S.F. R.R. Co. Bonds, including accrued Interest to Dec. 31, 1887,	$1,746,579.24	
Amounts carried forward,	$1,746,579.24	$8,576,640.91

Amounts brought forward,		$1,746,579.24	$8,576,640.91
Interest on Bonds of the Southern Kansas System, including accrued Interest to Dec. 31, 1887,		453,826.66	
Interest paid in 1887 on Land Grant Bonds,		169,487.50	
Interest on Bonds of Leased Roads, including accrued Interest to Dec. 31, 1887,		859,887.78	
One year's Interest on General Mortgage Bonds of the Leavenworth, Topeka and South-western Railway Company,		27,600.00	
One year's Interest on First Mortgage Bonds of the Sonora Railway Co. L'd.		283,500.00	
		$3,540,881.18	
Deduct Amount received from Land Grant Trust for Interest paid in 1887 on Land Grant Bonds,		169,487.50	
Total Interest Charges,		$3,371,393.68	
Sinking Funds for the year 1887, as per details in Income Account,		303,955.00	
Rental of Rolling Stock (Topeka Equipment Co.),		15,300.00	
Dividends:			
May 16, 1887,	$973,351.50		
Aug. 15, 1887,	973,434.00		
Nov. 15, 1887,	1,215,439.75		
Feb. 15, 1888,	1,312,500.00	4,474,725.25	
Total Fixed Charges, Sinking Funds, and Dividends,			8,165,373.93
Leaving a surplus of			$411,266.98
To which should be added the net profits of the Atchison Land Department for the year, amounting to			310,886.07
Making a total surplus of			$722,153.05

after deducting $303,955.00 for the Sinking Funds paid in 1887, which decreased the Company's indebtedness by reducing the amount of the bonds previously outstanding.

ATCHISON, TOPEKA & SANTA FÉ R.R. CO. AND THE SOUTHERN KANSAS RAILWAY CO.

The comparison of 1887 operations with 1886 shows as follows:

	1887.	1886.	Increase or Decrease.
Miles of Road, Dec. 31, .	3,016.35	2,525.80	*Inc.* 490.55
Average number of miles operated, ...	2,622.40	2,420.19	*Inc.* 202.21
Gross Earnings, . . .	$18,461,366.26	$15,984,307.19	*Inc.* $2,477,059.07
Operating expenses (excluding Taxes), . .	$9,857,291.07	$8,120,956.50	*Inc.* $1,736,334.57
Operating expenses (including Taxes), . .	$10,408,454.78	$8,613,911.56	*Inc.* $1,794,543.22
Net Earnings (excluding Taxes), ...	$8,604,075.19	$7,863,350.69	*Inc.* $740,724.50
Net Earnings (deducting Taxes), ...	$8,052,911.48	$7,370,395.63	*Inc.* $682,515.85
Per cent. Operating Expenses to Earnings (excluding Taxes), . .	53.39	50.81	*Inc.* 2.58
Per cent. Operating Expenses to Earnings (including Taxes), . .	56.38	53.89	*Inc.* 2.49
Gross Earnings per average mile operated, . .	$7,039.87	$6,604.57	*Inc.* $435.30
Operating Expenses per average mile operated (excluding Taxes), .	$3,758.88	$3,355.51	*Inc.* $403.37
Operating Expenses per average mile operated (including Taxes), .	$3,969.05	$3,559.19	*Inc.* $409.86
Net Earnings per average mile operated (excluding Taxes), . .	$3,280.99	$3,249.06	*Inc.* $31.93
Net Earnings per average mile operated (deducting Taxes), . .	$3,070.82	$3,045.38	*Inc.* $25.44
Total Passengers carried East, ...	1,023,094	853,146	*Inc.* 169,948
Total Passengers carried West, ...	1,116,529	933,869	*Inc.* 182,660
Gross Passenger Receipts East, ...	$2,191,873.50	$1,760,505.65	*Inc.* $431,367.85
Gross Passenger Receipts West, ...	$2,944,778.31	$2,265,499.24	*Inc.* $679,279.07
Tons Freight carr'd East,	1,464,945	1,199,082	*Inc.* 265,863
Tons Freight car'd West,	2,374,633	1,739,282	*Inc.* 635,351
Gross Freight Receipts East, ...	$3,523,528.92	$3,559,994.30	*Dec.* $36,465.38
Gross Freight Receipts West, ...	$8,724,814.85	$7,540,972.83	*Inc.* $1,183,842.02

EARNINGS.

The light crops harvested in the latter part of the summer and fall of 1887, the competition for business accompanied as is usual by a serious decline in the rates obtained, and the insufficiency of the Company's rolling stock (which to a considerable extent was employed on construction work) to move the business offered,—all these causes combined to make a serious reduction in the usual increased earnings of the Company for the second half as compared with the first half of the year, so that, while in the year 1886 the earnings for the last six months were $9,042,939.47 against $6,941,367.72 for the first six months, in 1887 the earnings of the last half of the year were only $9,369,731.28 against 9,091,634.98 for the first half. It is satisfactory to know that, although, owing to the causes named, the earnings for the year did not come up to expectations, yet the volume of business, notwithstanding also the competition of additional lines in our territory, has shown a large increase, arising chiefly from business received by the Atchison and Southern Kansas from the new auxiliary lines.

The number of tons of freight carried one mile in 1887 was 909,167,842, at an average rate of 1.347 cents per ton per mile, against 687,399,093 tons one mile, at an average rate of 1.615 cents per ton per mile, in 1886.

These figures include freight on construction material, which, if deducted from the two years would show 813,625,031 tons of commercial freight carried one mile in 1887, at an average rate of 1.385 cents per ton per mile, against 644,567,773 tons of commercial freight, at an average rate of 1.655 cents per ton per mile, in 1886.

The earnings from commercial freight for the twelve months thus show a reduction of no less than 0.27 cents in the average rate per ton per mile; and, if the same average rate had been obtained for the commercial business for 1887 as for 1886, the increased revenue would have amounted to $2,196,049.29. In 1882, the average rate per ton per mile obtained was 2.516 cents, so that, in the five years since then, the average rate has declined 1.131 cents. While this has been to some extent caused by the carrying of an increased tonnage of a lower class of freight, yet it is sufficient to show the large reduction in rates generally that has occurred during so short a period; and it is a matter of satisfaction that the Company has borne up so well against such a severe decline.

In passenger business, owing to the competition for California passengers in the early part of 1886, the average rate for 1887 shows some improvement, there having been carried 217,909,566 passengers one mile, at an average rate of 2.357 cents, against 176,810,489 passengers one mile, at an average rate of 2.277 cents, in 1886.

OPERATING EXPENSES.

Although strict economy has been exercised in operating the road, there has been a considerable increase in the operating expenses, caused to some extent by the average miles operated having increased 202.21 miles, and also by the largely increased tonnage transported; namely, 238,511,184 tons one mile, of freight, and 41,099,077 passengers carried one mile.

During the year, 101.008 miles of road have been relaid with steel rail, the cost of which, as well as various other improvements, is included in the operating expenses, so that, exclusive of additions to the rolling stock, the charges to construction have amounted to only $322,912.89.

CAPITAL STOCK ACCOUNT.

At the close of 1886, the Capital Stock, including the Scrip outstanding, amounted to, ...	$64,893,250.00
There has been issued during the year, in exchange for Gulf, Colorado & Santa Fé Railway Company's stock,	10,000.00
And to meet the cost of extensions, not otherwise provided for, and for additional rolling stock, ...	10,096,750.00
Total, ...	$75,000,000.00

BOND ACCOUNTS.

The Bonded Debt of the Atchison & The So. Kansas Companies on Dec. 31, 1886, was, ...		$40,191,000.00
There were issued in 1887 : —		
A., T. & S. F. R.R. Co. Six per cent. Sinking Fund Secured Bonds, ...		250,000.00
A., T. & S. F. R.R. Co. Collateral Trust Five per cent. Bonds, account of construction of California Central and Denver & Santa Fé roads, .		6,799,000.00
The So. Kansas R'y Co. Gulf Division First Mortgage Five per cent. Bonds for construction of roads in Indian Territory, ...		416,000.00
The So. Kansas R'y Co. Income Bonds, issued under Circular No. 58, ...		1,480,000.00
		$49,136,000.00
Redeemed in 1887 : —		
A., T. & S. F. Five per cent. Bonds, . .	$33,000.00	
A., T. & S. F. Sinking Fund Five per cent. Bonds, ...	38,000.00	
A., T. & S. F. Four and a half per cent. Sinking Fund Bonds, ...	77,000.00	
A., T. & S. F. Six per cent. Sinking Fund Secured Bonds, ...	122,000.00	
A., T. & S. F. Land Grant Bonds, . . .	15,000.00	
So. K. & W. First Mortgage Bonds, . . .	29,000.00	
Sumner County R.R. Co. First Mortgage Bonds, ...	9,000.00	323,000.00
Outstanding, Dec. 31, 1887, ...		$48,813,000.00

CANCELLED BOND ACCOUNTS.

These accounts on December 31, 1887, included the following Bonds: —

A., T. & S. F. Five per cent. Bonds,	$211,000.00
" " Sinking Fund Five per cent. Bonds,	262,000.00
" " Four and a half per cent. Sinking Fund Bonds,	540,000.00
" " Six per cent. Sinking Fund Secured Bonds,	578,000.00
" " Land Grant Mortgage Bonds,	704,000.00
" " Land Income Bonds,	480,000.00
So. K. & W. First Mortgage Bonds,	164,000.00
Sumner County R.R. Co. First Mortgage Bonds,	63,000.00
	$3,002,000.00

SURPLUS ACCOUNTS DEC. 31, 1887.

Income Accounts,	$8,538,408.47
Cancelled Bond Accounts,	3,002,000.00
Total,	$11,540,408.47

Which is represented by the following: —

Permanent investment in Construction in excess of stocks and bonds outstanding,		$1,596,529.76
Materials and supplies on hand,		2,307,288.89
Advances to Atlantic & Pacific R.R. Co. (including advances, repayable, of 25% on interchanged business), partly secured by hypothecation of Atlantic and Pacific lands,		3,923,208.99
Mortgage bonds, sundry securities and investments,		6,785,706.25
Cash on hand, amounts due from new auxiliary R.R. Cos. and accounts receivable in excess of vouchers, accounts payable, accrued interest to Dec. 31, 1887, and Dividend payable Feb. 15, 1888,		4,047,000.97
		$18,659,734.86
Less:		
Accounts with subscribers under Circulars 57, 58, and 59, payable in Bonds as provided in those Circulars,	$2,317,560.00	
Land Grant Trust Account,	4,239,412.46	
Amounts to credit of Renewal and Fire Insurance Funds,	562,353.93	7,119,326.39
Net Surplus,		$11,540,408.47

CONSTRUCTION EXPENDITURES.

During the year, the following amounts were expended in new construction and improvements: —

CONSTRUCTION AND EQUIPMENT EXPENDITURES CHARGED TO A., T. & S. F. & SOUTHERN KANSAS CONSTRUCTION ACCOUNTS.

During the year, the sum of $3,860,301.09 was expended for new rolling stock and $322,912.89 in making substantial improvements and additions on the above roads, as follows: —

For new Stone Culverts and Improvements of Line, . .		$10,393.01
For new Side Tracks, ...		75,348.76
For new Fences, ...		23,626.44
For new Bridges, ...		19,678.61
For new Buildings, ...		83,916.86
For new Tools and Machinery, ...		9,929.60
For Real Estate, ...		48,593.00
For Miscellaneous, ...		51,426.61
		$322,912.89
For new Locomotives, ...	$1,530,281.86	
For new Cars, ...	2,330,019.23	3,860,301.09
		$4,183,213.98

Expenditures during the year for real estate and permanent improvements on existing roads charged to account of auxiliary companies: —

Florence, Eldorado & Walnut Valley Railroad, ...	$1.745.83
Kansas City, Emporia & Southern Railway, ...	3,369.41
Kansas City, Topeka & Western Railroad, ...	118,059.06
Leavenworth, Topeka & South-western Railway, . . .	5,742.11
Marion & McPherson Railway, ...	9,646.82
New Mexican Railroad, ...	34,852.82
New Mexico & Arizona Railroad, ...	9,974.36
New Mexico & Southern Pacific Railroad, ...	36,254.04
Pueblo & Arkansas Valley Railroad, ...	29,703.81
Rio Grande & El Paso Railroad, ...	13,115.62
Rio Grande, Mexico & Pacific Railroad, ...	9,713.09
Silver City, Deming & Pacific Railroad, ...	6,803.26
The Southern Kansas R'w'y (H. & W. and Kan. So. Divs.),	767.54
The Southern Kansas R'w'y (Kan. City & Emp. Div.), .	465,419.11
Wichita & South-western Railway, ...	65,334.83
	$810,501.71

Expenditures during the year for real estate and construction of new roads: —

* Atchison, Topeka & Santa Fé R.R. in Chicago, ...		$3,561,725.17
* Chicago, Kansas & Western Lines, ...		6,851,687.55
* Chicago, Santa Fé & California Railway,	$14,123,838.79	
Mississippi River Bridge (at Ft. Madison),	510,931.53	
Missouri River Bridge (at Sibley), . . .	579,318.17	15,214,088.49
California Central Railway, ...		3,843,199.77
Denver & Santa Fé Railway, ...		3,232,313.99
Florence, Eldorado & Walnut Valley Railroad, Winfield Extension, ...		71,787.64
Kansas City, Emporia & Southern Railway, Howard Extension, ...		20,404.72
Leavenworth, Northern & Southern Railway, ...		1,287,848.17
Pueblo & Arkansas Valley Railroad, Clelland Extension, .		211,836.70
St. Joseph & Santa Fé Railroad, ...		178,798.66
St. Louis, Kansas City & Colorado Railroad, ...		2,186,774.90
Southern Kansas & Panhandle Railroad, ...		185,317.42
The Southern Kansas Railway, Frontenac Extension, . .		38,158.86
The Southern Kansas Railway, Girard Extension, . . .		62,057.27
The Southern Kansas R'w'y, Indian Territory Extensions,		2,631,822.94
The Southern Kansas Railway, Medicine Lodge Extension,		42,738.93
The Southern Kansas Railway of Texas, ...		1,154,000.38
		$40,774,561.56

Other expenditures: —

Cañon City Coal Company, ...	$92,000.00	
Cherokee & Pittsburg Coal & Mining Co., .	187,788.41	
Kansas City Belt Railway, ...	201,300.00	
Las Vegas Hot Springs Hotel and Bathhouses, ...	78,746.34	$559,834.75

SUMMARY.

Expenditures for additions and improvements to Atchison & Southern Kansas Roads, ...	$4,183,213.98
Expended for real estate and permanent improvements charged to account of auxiliary companies, ...	810,501.71
Expenditures during the year for real estate and construction of new roads, ...	40,774,561.56
Other expenditures, ...	559,834.75
Total, ...	$46,328,112.00

---

* The cost of these roads has been provided for by the issue of their own bonds, which are not direct obligations of either the Atchison or Southern Kansas Companies.

THE KANSAS CITY BELT RAILWAY.

This road is now being used by the Chicago, Milwaukee & St. Paul Railway Company for its entrance into Kansas City, and before this report reaches the stockholders the Chicago, Santa Fé & California Railway Company will also use it for a similar purpose, so that sufficient earnings are insured to meet all expenses and fixed charges; and there should also be an increasing surplus from year to year for the capital stock, one-half of which is owned by the Atchison Company through the Kansas City, Topeka & Western Railroad Company.

COAL PROPERTIES.

The total number of tons of coal mined during the year was 958,184 tons, of which 452,544 tons were for the Company's use and 505,640 tons for commercial purposes, against 243,656 tons for the Company's use and 468,739 tons for commercial purposes in 1886.

The approximate freight earnings from coal transported in 1887 amounted to $1,419,832.72 against $1.247.348.61 for the year 1886.

The amount expended on the Cherokee & Pittsburg property in 1887 was $187,788.41, making the total expenditure to Dec. 31, 1887, $407,696.79. The mine began shipping coal in the month of August, and the output from this and the Company's other coal properties will be largely increased in 1888; and there will be a corresponding increase in revenue therefrom.

The Atchison and its auxiliary companies own in all about 37,000 acres of coal land, and lease 8,310 acres, from which it is estimated a total of 56,000,000 tons can be profitably mined.

The aggregate cost of the real estate and the amount expended for permanent plant of all these properties, including 156 coke ovens, is about $2,250,000. Some of these properties were purchased several years ago, and additions have been made thereto from year to year, so that the present value is largely in excess of their actual cost.

LAND DEPARTMENT.

There were no sales of land in 1887; but the cash receipts of the Department during the year were: from Deferred Payments and Interest, $509,103.29; and from Miscellaneous, $457.68, total, $509,560.97.

The expenses and taxes of the Department were $9,921.05, and the net result of the operations of the year was therefore $499,639.92.

From this there was paid for sundry expenses of the Trust $1,131.35; for interest on Land Grant Bonds, $169,487.50; and $18,135.00 for $15,000 Land Grant Bonds purchased and cancelled, leaving a net balance for the year of $310,886.07.

THE SONORA SYSTEM.

The operations for the year were as follows:—

New Mexico and Arizona Railroad:—

From Benson to Nogales, 87.78 miles,	
Total Earnings,	$151,267.83
Operating Expenses and Taxes,	177,020.06
Loss,	$25,752.23

Sonora Railway (Mexico):—

From Nogales to Guaymas, 262.41 miles,	
Total Earnings (U.S. Currency),	$232,297.20
Operating Expenses (U.S. Currency),	224,125.34
Profit (U.S. Currency),	$8,171.86
The above figures are exclusive of Salaries of Government Directors and other Special Expenses at Boston Office, amounting to	12,910.01
Leaving a loss (U.S. Currency) of	$4,738.15

The interest on the First Mortgage Bonds has been paid by the Atchison Company, and will be found charged in its Income Account.

There has been expended on Construction Account of the Sonora Railway during the year $8,330.05.

No subsidy has been collected during the year, so that the amount due from the Mexican Government is $1,477,754.56 (U.S. Currency), as stated in Report for 1886.

ROADS OWNED JOINTLY.

LEAVENWORTH, TOPEKA AND SOUTH-WESTERN RAILWAY.

This road extends from Leavenworth, Kan., to Meriden Junction, Kan., on the Atchison, Topeka & Santa Fé Railroad, a distance of 46.30 miles, and is owned jointly with the Union Pacific Railway Company.

The operations for the year were as follows: —

Total Earnings,	$67,243.55
Operating Expenses and Taxes,	92,784.78
Net Loss,	$25,541.23

Of which the Atchison Company's proportion is one-half.

MANHATTAN, ALMA AND BURLINGAME RAILWAY.

This road extends from Manhattan, Kan., to Burlingame, Kan., on the Atchison, Topeka & Santa Fé Railroad, a distance of 56.62 miles, and is owned jointly with the Union Pacific Railway Company.

The operations for the year were as follows: —

Total Earnings,	$53,287.11
Operating Expenses and Taxes,	61,894.75
Net Loss,	$8,607.64

Of which the Atchison Company's proportion is one-half.

WICHITA & WESTERN AND KINGMAN, PRATT & WESTERN RAILROADS.

The Wichita & Western road extends from Wichita, Kan. (on the Wichita & South-western Railway), westward to Kingman, Kan., and the Kingman, Pratt & Western road is a continuation to the western boundary of Kiowa County, Kansas, a total distance of 124.64 miles.

These roads are owned jointly with the St. Louis & San Francisco Railway Company.

The operations for the year were as follows: —

Total Earnings,	$241,437.05
Operating Expenses and Taxes,	137,455.71
Net Profit,	$103,981.34
From which was paid interest on the bonded debt, amounting to	63,965.48
Leaving a surplus for the year of	$40,015.86

This, with the surplus Dec. 31, 1886, of $13,242.37, made a total surplus of $53,258.23, from which was declared a dividend of 7 per cent. on the Capital Stock amounting to $31,500.00, of which the Atchison Company's proportion was one-half.

GENERAL SUMMARY OF OPERATIONS OF ROADS OWNED BY THE ATCHISON COMPANY FOR THE YEAR 1887.

	Receipts.	Expenses.
The Atchison & The Southern Kansas Cos.:		
Earnings, ...	$18,461,366.26	
Operating Expenses and Taxes, . . .		$10,408,454.78
Sundry Profits, Interest, etc., ...	781,106.04	
Paid to St. L. & S. F. R'y Co., . . .		192,787.35
Rebate of 10 per cent. allowed to C., K. & W. R.R. Co., ...		64,589.26
Interest Charges, ...		3,229,781.18
Land Grant Trust for Interest on Bonds,	169,487.50	
Rental of Rolling Stock (Topeka Equipment Co.), ...		15,300.00
Dividends on A., T. & S. F. R.R. Co. Capital Stock, ...		4,474,725.25
Net profit, ...		1,026,321.98
	$19,411,959.80	$19,411,959.80

Net profit of the Atchison and The Southern Kansas Companies, ...	$1,026,321.98	
New Mexico & Arizona R.R. Company:		
Earnings, ...	151,267.83	
Operating Expenses and Taxes, . . .		$177,020.06
Sonora Railway Company, Limited:		
Earnings, ...	232,297.20	
Operating Expenses, ...		224,125.34
Interest on Bonds and other charges, .		296,410.01
Leavenworth, Topeka & South-western Railway Company:		
Earnings (one-half), ...	33,621.77	
Operating Expenses and Taxes (one-half), ...		46,392.39
Interest on Bonds (one-half), ...		27,600.00
Manhattan, Alma & Burlingame Railway Company:		
Earnings and Miscellaneous Receipts (one-half), ...	26,643.55	
Operating Expenses and Taxes (one-half), ...		30,947.37
Amounts carried forward, . . .	$1,470,152.33	$802,495.17

Amounts brought forward, . . .	$1,470,152.33	$802,495.17
Wichita & Western and Kingman, Pratt & Western Railroad Companies:		
Earnings (one-half), ...	120,718.53	
Operating Expenses and Taxes (one-half), ...		68,727.86
Interest on Bonds (one-half), ...		31,982.74
Dividend on Capital Stock for 1887 (one-half), ...		15,750.00
Net profit of all the above Companies,		671,915.09
	$1,590,870.86	$1,590,870.86

Total net results from operation of Company's roads as above in 1887, . . .	$671,915.09
From this amount there has been charged to the Income Accounts of the Atchison and The Southern Kansas Companies in 1887 for Sinking Funds, thereby reducing the Bonded Debts of those Companies, ...	303,955.00
Leaving net, ...	$367,960.09
To which should be added the net profit of the Atchison Land Department for the year, amounting to, ...	310,886.07
General results for the year, Net Surplus,	$678,846.16

NOTE.—This summary is made for the general information of stockholders without regard to the particular disposition made of the various items in the account books of the Company.

SPECIAL MATTERS.

LEAVENWORTH, NORTHERN & SOUTHERN RAILWAY.

Work was commenced on this line in December, 1886. The track between Cummings, on the main line of the Atchison, and Wilder, on the Kansas City, Topeka & Western, 46.19 miles, was completed during the year; and the earnings since October have been included with those of the Atchison System.

DENVER & SANTA FÉ RAILWAY.

The charter for this line was filed March 22, 1887; and the line, 116.26 miles, was turned over to the Operating Department Oct. 9, 1887. The building of this road gives the Atchison Company its own independent line to Denver, the great centre of trade for Colorado. The earnings for the short period it was operated are included in the earnings of the Atchison System. The Denver Circle Railroad, which forms part of the property of the Denver and Santa Fé Railway, is 8.01 miles, making the total mileage owned by the Company 124.27 miles.

PUEBLO & ARKANSAS VALLEY RAILROAD.—CLELLAND EXTENSION.

The length of this extension from Clelland to Cañon City, including two coal spurs, is 10.34 miles, and was completed at the close of the year. Cañon City is a point of considerable importance in Colorado; and a good business is fully anticipated for this extension, chiefly in the development of the coal traffic, which will be largely increased in 1888, the Company having hitherto been unable to supply half the demand for the valuable coals of this district, which the new line will enable the Company to bring to market.

THE SOUTHERN KANSAS RAILWAY.—GULF DIVISION.

The extension from Arkansas City to a connection with the Gulf, Colorado & Santa Fé, 154.06 miles, was completed and turned over to the Operating Department June 12; and the Kiowa Extension was completed to the West line of the Indian Territory, 116.35 miles, and turned over to the Operating Department September 12. The road of The Southern Kansas Railway Company of Texas from the

West line of the Indian Territory to Panhandle City in Carson County in the Panhandle of Texas, 99.50 miles, was also completed at the close of the year. These three extensions aggregate 369.91 miles (of which there were completed in 1886 69.17 miles), being somewhat in excess of the mileage contemplated under Circular No. 58.

GULF, COLORADO & SANTA FÉ RAILWAY.

The extension of this road northward to a junction with the extension of The Southern Kansas Railway from Arkansas City at Purcell, 100 miles, was completed in the summer of 1887; and, had the promise of large crops been fulfilled, an excellent through and a largely increased local business would have resulted. As it was, the receipts from all sources exceeded the operating expenses, taxes, and fixed charges by $32,443.16. The prospects for 1888 are still more favorable than at the corresponding period of 1887, and it is confidently hoped that there will be a considerable surplus from the year's business after paying all the charges.

THE CHICAGO, KANSAS & WESTERN RAILROAD.

At the close of 1886, as stated in the report for that year, there had been constructed 401.23 miles. On Feb. 14, 1887, a further subscription was called for under Circular No. 59; and at the close of 1887 the completed mileage of the Chicago, Kansas & Western, together with the Southern Kansas & Panhandle Road, 28.25 miles, the purchase of which by the Chicago, Kansas & Western has been agreed upon, was 903.16 miles, being the total mileage contemplated for this Company under Circulars Nos. 57 and 59.

The same causes which have affected the earnings of the Atchison Company have also affected those of the Chicago, Kansas & Western; but, with good crops and under more favorable conditions, a much better result is expected for the year 1888.

For the year 1887 the road earned, including $64,589.26 for the rebate of 10 per cent., a small surplus over and above the proportion of fixed charges for the average miles operated. It will be seen that the business of the Atchison and Southern Kansas, interchanged with the various lines of the Chicago, Kansas & Western, amounted to $645,892.60, which justifies the building of these extensions in the interest of the Atchison, after making due allowance for a portion of this business which would doubtless have been carried without these extensions.

CALIFORNIA CENTRAL RAILWAY.

At the close of the year, this Company had completed and was operating the following lines: —

San Bernardino to Mentone,	11.93
San Bernardino to Los Angeles and cut-offs,	64.71
Los Angeles to Santa Monica,	17.03
Citrus to San Juan,	68.65
Escondido Junction to Escondido,	21.23
	183.55

There was also graded and in course of construction 67 miles, the completion of which has been greatly delayed for the want of ties. About 290 miles in all will be finished by the summer of 1888.

ST. JOSEPH & SANTA FÉ RAILROAD.

This road commences on the east side of the Missouri River, opposite Atchison, and connects with the St. Joseph & St. Louis road at St. Joseph, the mileage constructed being about 19 miles. It thus connects the important city of St. Joseph with the main line of the Atchison Company.

The St. Joseph & St. Louis Railroad was built from St. Joseph to Lexington Junction, about 76 miles, where it connects with the Chicago line of the Chicago, Santa Fé & California Railway. The importance of this road to the Chicago line, in forming a direct and short line between Chicago and St. Joseph, Mo., was so obvious that a favorable opportunity to purchase its control was availed of at a cost of about $800,000. The two properties have since been consolidated under the name of the St. Joseph, St. Louis & Santa Fé Railway Company, the total mileage being 95.70 miles. The road has more than earned its operating expenses, taxes, and fixed charges.

ST. LOUIS, KANSAS CITY & COLORADO RAILROAD.

Appreciating the importance of a system so extensive as ours having direct communication with the city of St. Louis, a purchase was made of the St. Louis, Kansas City & Colorado Railroad; and during the half year it has been improved and extended to Union in Missouri, 61.40 miles, the total cost being $2,186,774.90. One of the chief reasons for purchasing this property at the time, instead of delaying the project, was the right which attached to it of running into the depot at St. Louis over one of the established lines there. The intention is, when conditions are more favorable, to extend the line to Kansas City.

CHICAGO LINE AND TERMINALS.

In the last annual report, the reasons were stated in full which led your Directors to determine upon the building of an independent line between Chicago and Kansas City.

A desirable offer having been made to this Company of the Chicago & St. Louis Railway between Chicago and Streator, Ill., with a branch to Pekin, the property was purchased; and the extension from Ancona, on that line, to a junction with the Belt Railway at Kansas City has been constructed under the name of the Chicago, Santa Fé & California Railway.

Grading upon the new line was commenced in March, 1887, and track-laying in May. The line between Ancona and Fort Madison was completed Dec. 17, 1887, and between Fort Madison and the Sibley Crossing of the Missouri River Dec. 31, 1887.

The bridge over the Mississippi River, built under the charter of the Mississippi River Railroad and Toll Bridge Company, was commenced in March, 1887, and was ready for passenger trains Dec. 7, 1887. The length of the bridge, including approaches, is .61 of a mile.

The bridge over the Missouri River, built under the charter of the Sibley Bridge Company, was commenced in February, 1887, and was ready for the passage of trains Jan. 26, 1888. The length of the bridge, including approaches, is .76 of a mile.

By reason of the non-completion of the bridge over the Missouri River, the track was not connected with the Kansas City Belt Line until Jan. 26, 1888.

As track-laying extended into the dead of winter and it was not possible to put it into proper shape until milder weather, it was considered best to delay the opening of the through line until the 1st of May, 1888.

Everything in connection with this line has been constructed in the very best manner; and independent parties, well capable of judging, have expressed the most favorable opinion both as to the wisdom of building the line, the character of the line itself, which is the shortest between Chicago and Kansas City, and the terminal facilities. The latter are certainly not excelled by those of any company whose road enters Chicago.

CAPITALIZATION.

On pages 4 and 5 will be found a statement of the mileage at the close of 1887 of all the roads operated by the Atchison Company, including the lines owned jointly with the Union Pacific and St. Louis & San Francisco Companies. If the mileage of the latter be omitted, it will be found that the mileage of the Atchison properties alone was 6,341.37 miles. The Bonded Indebtedness of this mileage, including the Income Bonds of The Chicago, Kansas & Western Railroad Company, was $120,798,000, being at the average rate of $19,049 per mile.

As the whole or a majority of the capital stocks of each of the companies by which the auxiliary roads were constructed is owned by the Atchison Company, it follows that the capital stock of the latter, $75,000,000, controls all of the mileage referred to, being at the average rate of $11,827 per mile, or, stock and bonds together, $30,876 per mile. This includes the cost of the Chicago line and the terminals in that city. The Atchison is entitled to all profits from the operation of this mileage after paying the bonded and other necessary charges, except in the case of the California Southern Railroad Company, of which Company's capital stock about $3,000,000 is held by other parties, and except some of the Kansas auxiliary companies, of whose capital stocks a relatively small amount is held by the towns and counties in that State.

The Board has pleasure in acknowledging the fidelity and efficiency with which the officers in charge of the several departments and the men employed under their direction have performed the duties devolving upon them during the past year.

By order of the Board of Directors,

WILLIAM B. STRONG,
President.

Atchison, Topeka, and Santa Fé Railroad Company.

Boston, April 21, 1888.

To the President and Directors of the Atchison, Topeka & Santa Fé Railroad Company:

Gentlemen,— I herewith hand you Condensation of General Balance Sheets of the Atchison, Topeka & Santa Fé Railroad Company and The Southern Kansas Railway Company for the fiscal year ending Dec. 31, 1887, and various statements relating to the financial and business operations of the two Companies, all of which are respectfully submitted.

JOHN P. WHITEHEAD,
Comptroller and Gen. Auditor.

ATCHISON, TOPEKA & SANTA FÉ R.R. CO.

CONDENSATION OF GENERAL BALANCE

Assets.

Construction, Equipment, and Rolling Stock Account to Dec. 31, 1886,	$54,071,498.08	
New Rolling Stock in 1887,	3,860,301.09	
Additions and Improvements in 1887,	322,912.89	
Construction of New Roads in Southern Kansas System in 1887, including distribution of $1,480,000 Income Bonds,	4,720,964.65	$62,975,676.71
Interest in Leased and Auxiliary Roads, represented by Bonds and Capital Stocks owned by the Atchison Co.,		67,510,153.05
		$130,485,829.76
Property of Leased Roads, represented by Bonds included in the liabilities, as per contra,		14,007,000.00
Materials and Supplies on hand,		2,307,288.89
Cost of seven-eighths interest in steamship "City of Topeka,"		121,517.97
Pottawatomie Lands Account,		23,928.51
Cash in hands of Trustees for purchase and cancellation of Bonds,		39,581.94
Atlantic & Pacific R.R. Co., partly secured by A. & P. lands,		3,074,013.78
Atlantic & Pacific R.R. Co. Advances, repayable, of 25% on interchanged business,		849,195.21
Sundry Bonds and Securities at Cost,		4,057,188.28
Mortgage Bonds of Leased and Auxiliary Roads owned by the Atchison Co.,		2,607,000.00
United States Government,		321,236.00
Due from new auxiliary Railroad Cos.,		5,787,789.49
Accounts Receivable, Agents, R.R. Cos., etc.,		5,066,645.69
Cash and Bank Balances, Boston,	$759,402.43	
" " " Topeka,	228,018.86	
" " " Lawrence,	53,237.43	1,040,658.72
		$169,788,874.24

NOTE.—The above assets are exclusive of Bills Receivable for Sales of Land to Dec. 31, 1887, amounting to $715,083.45.

AND THE SOUTHERN KANSAS RAILWAY CO.

SHEETS, DECEMBER 31, 1887.

Liabilities.

Capital Stock, including Scrip exchangeable into Stock, A., T. & S. F. R.R. Co.,		$75,000,000.00	
Capital Stock:—			
* The So. Kansas R'y Co.	$5,059,847.18		
Capital Stock to be issued:—			
The So. Kansas R'y Co.,	16,452.82	5,076,300.00	$80,076,300.00
BONDED DEBT.			
A., T. & S. F. R.R. Co. Bonds, as per statement on page 30,		$37,695,000.00	
Bonds of The So. Kansas R'y Co., as per statement on page 31,		11,118,000.00	48,813,000.00
			$128,889,300.00
Contingent Liabilities (see contra):—			
For Bonds of roads operated as part of the Atchison System, per statement on page 30,		$12,424,000.00	
For Bonds of The So. Kansas R'y of Texas, operated by The Southern Kansas Railway Co.,		1,583,000.00	14,007,000.00
Scrip Certificates, unpaid,		$195.00	
Coupons overdue, not presented,		57,352.50	
Coupons due Jan. 2, 1888,		511,255.00	
Accrued Interest to Dec. 31, 1887, on Bonds, the coupons of which fall due February 1, March 1, April 1, May 1, and June 1, 1887,		622,061.23	1,190,863.73
Dividends not called for,		$23,820.75	
Dividend declared from earnings of 1887, payable Feb. 15, 1888,		1,312,500.00	1,336,320.75
Accounts with subscribers under Circulars 57, 58, and 59, payable in Bonds, as provided in those Circulars,			2,317,560.00
Vouchers, Pay-rolls, and Accounts payable,			5,639,847.02
Land Grant Trust Account,			4,239,412.46
Sundry Book and Suspended Accounts (balance),			65,807.88
Fire Insurance Fund Account,			62,353.93
Renewal and Improvement Fund Account,			500,000.00
SURPLUS ACCOUNTS.			
Income Accounts,			8,538,408.47
Cancelled Bond Accounts,			3,002,000.00
			$169,788,874.24

---

* Of the outstanding Capital Stock of The Southern Kansas Railway Co., $1,316,400 is owned by the Atchison Co. directly, and the balance through its ownership of the Capital Stock of the Kansas City, Topeka & Western R.R. Co.

ATCHISON, TOPEKA & SANTA FÉ R.R. CO.

INCOME ACCOUNT

Debits.

Operating Expenses, ...	$9,857,291.07	
Taxes, ...	551,163.71	
Total Expenses and Taxes, ...		$10,408,454.78
Rental of Rolling Stock (Topeka Equipment Co.), ...		15,300.00
Interest on Bonds, including accrued Interest to Dec. 31, 1887: —		
A., T. & S. F. R.R. Co., ...	$1,746,579.24	
The So. Kansas Railway Company, . .	453,826.66	2,200,405.90
Interest on Land Grant Bonds (see contra),		169,487.50
Interest on Bonds of Leased Roads, including accrued Interest to Dec. 31, 1887, ...		859,887.78
One year's interest on General Mortgage Bonds of the Leavenworth, Topeka & South-western Railway Company,		27,600.00
One year's interest on First Mortgage Bonds of the Sonora Railway Co., Limited, ...		283,500.00
Sinking Funds, as follows: —		
Paid to Trustees A., T. & S. F. 5% Bonds for Sinking Fund, ...	$32,600.00	
Cost of $38,000 A., T. & S. F. Sinking Fund 5% Bonds, redeemed and cancelled, ...	35,530.00	
Cost of $77,000 A., T. & S. F. 4½% Sinking Fund Bonds, redeemed and cancelled,	72,025.00	
Cost of $122,000 A., T. & S. F. 6% Sinking Fund Secured Bonds, redeemed and cancelled, ...	122,000.00	
Cost of $29,000 So. K. & W. First Mortgage Bonds, redeemed and cancelled,	31,900.00	
Cost of $9,000 Sumner County R.R. Co. First Mortgage Bonds, redeemed and cancelled, ...	9,900.00	303,955.00
Paid to St. L. & S. F. R'y Co. under Agreement of Oct. 5, 1886, ...		192,787.35
Rebate of 10% allowed to C. K. & W. R.R. Co. on earnings from Interchanged business, ...		64,589.26
Dividends on Capital Stock of the A., T. & S. F. R.R. Co., including Dividend payable Feb. 15, 1888 (see page 8),		4,474,725.25
Credit Balance, ...		411,266.98
		$19,411,959.80

AND THE SOUTHERN KANSAS RAILWAY CO.

FOR THE YEAR 1887.

Credits.

Earnings: Freight,	$12,248,343.77	
Passenger,	5,136,651.81	
Mail,	379,937.61	
Express,	365,521.41	
Miscellaneous,	330,911.66	$18,461,366.26
Track Rentals :—		
Atlantic & Pacific R.R. Co.,	$12,950.94	
St. Louis & San Francisco Railway Company,	9,235.68	
Leavenworth, Topeka & Southwestern Railway Company,	7,766.52	29,953.14
Net Land Receipts of The Southern Kansas Railway Company,		33,350.49
Sundry Profits,		553,386.31
Balance of General Interest Account,		164,416.10
Received from Land Grant Trustees for Interest on Land Grant Bonds (see contra),		169,487.50
		$19,411,959.80
Credit Balance Income Account for the year 1887,		$411,266.98
Credit Balance Income Account at close of 1886,		8,127,141.49
Credit Balance Income Account at close of 1887,		$8,538,408.47

STATEMENT OF DETAILS OF BONDED DEBT, ANNUAL INTEREST, AND SINKING FUNDS, DEC. 31, 1887.

EXCLUSIVE OF BONDS UNSOLD AND OWNED BY THE ATCHISON COMPANY.

DIRECT LIABILITIES OF THE ATCHISON COMPANY.

BONDS OF THE ATCHISON, TOPEKA AND SANTA FE R.R. CO.	When Payable.	Amount Outstanding.	Interest.			Sinking Funds.	
			Rate.	Annual Interest.	When Payable.	Approximate Annual Amt.	When Payable.
First Mortgage, Gold	July 1, 1899	$7,041,000.00	7	$492,870.00	Jan. and July.		
Consolidated Mortgage, Gold	April 1, 1903	108,500.00	7	7,595.00	April and Oct.		
Five Per Cent. Bonds*	April 1, 1909	974,000.00	5	48,700.00	April and Oct.	$34,250.00	Apr. 1 and Oct. 1.
Sinking Fund Five Per Cent. Bonds	Sept. 1, 1920	3,481,000.00	5	174,050.00	Mar. and Sept.	37,000.00	Sept. 1.
Four and a half Per Cent. Sinking Fund Bonds*	Oct. 1, 1920	4,610,000.00	4½	207,450.00	April and Oct.	78,000.00	Oct. 1.
Six Per Cent. Sinking Fund Secured Bonds*	Dec. 1, 1911	12,270,000.00	6	736,200.00	June and Dec.	123,000.00	Dec. 24.
Collateral Trust Five Per Cent. Bonds, Gold*	Feb. 1, 1937	6,799,000.00	5	339,950.00	Feb. and Aug.		
Note. Bonds marked * are secured by Bonds of Leased and Auxiliary Roads.		$35,283,500.00		$2,006,815.00		$272,250.00	
Land Grant Mortgage, Gold (Principal and Interest payable from Land Receipts)	Oct. 1, 1900	$2,411,500.00	7	$168,805.00	April and Oct.		

CONTINGENT LIABILITIES ON BONDS OF ROADS OPERATED AS PART OF THE ATCHISON SYSTEM.

BONDS OF LEASED ROADS ON WHICH INTEREST IS PAYABLE BY THE ATCHISON CO. AS AND FOR RENTAL.	Rate per Mile.	When Payable.	Amount Outstanding.	Interest.			Sinking Funds.	
				Rate.	Annual Interest	When Payable.	Approximate Annual Am'nt.	When Payable.
Cowley, Sumner & Fort Smith R.R. Co. First Mortgage, Gold †	$8,000	Oct. 1, 1909	$798,000.00	7	$55,860.00	April and Oct.	....	....
Florence, Eldorado & Walnut Valley R.R. Co. First Mortgage, Gold	10,000	Aug. 1, 1907	775,000.00	7	54,250.00	April and Oct.	....	....
Kansas City, Emporia & Southern R.R. Co. First Mortgage, Gold †	8,000	July 1, 1909	532,000.00	7	37,240.00	Jan. and July.	....	....
Kansas City, Topeka & Western R.R. Co. First Mortgage, Gold	13,000	July 1, 1905	854,000.00	7	59,780.00	Jan. and July.	....	....
Kansas City, Topeka & Western R.R. Co. Income Bonds, Gold †	4,600	Mar. 1, 1906	200,000.00	7	14,000.00	Mar. and Sept.	....	....
Marion & McPherson R.R. Co. First Mortgage, Gold †	7,000	Oct. 1, 1909	713,000.00	7	49,910.00	April and Oct.	....	....
New Mexico & Southern Pacific R.R. Co. First Mortgage, Gold †	15,000	April 1, 1909	4,425,000.00	7	309,750.00	April and Oct.	....	....
Pueblo & Arkansas Valley R.R. Co. First Mortgage, Gold †	14,000	July 1, 1905	1,633,000.00	7	114,310.00	Jan. and July.	....	....
Pueblo & Arkansas Valley R.R. Co. First Mortgage, Gold †		July 1, 1905	2,082,000.00	7	145,740.00	Jan. and July.	....	....
Wichita & South-western R.R. Co. First Mortgage, Gold. Interest guaranteed	15,000	July 1, 1902	412,000.00	7	28,840.00	Jan. and July.	....	....
The Principal and Interest of bonds marked † are guaranteed by the Atchison Company.			$12,424,000.00		$869,680.00		....	....

BONDS OF THE SOUTHERN KANSAS RAILWAY SYSTEM.

BONDS OF THE SOUTHERN KANSAS SYSTEM.	When Payable.	Amount Outstanding.	Interest.			Sinking Funds.	
			Rate.	Annual Interest.	When Payable.	Annual Amount.	When Payable.
Kansas City, Lawrence & Southern R.R. Co. First Mortgage	April 1, 1909	$2,940,000.00	6	$176,400.00	April and Oct.		
Southern Kansas & Western R.R. Co. First Mortgage	Jan. 1, 1910	1,659,000.00	7	116,130.00	Jan. and July.	$31,036.57	Nov. 1.
Sumner County R.R. Co. First Mortgage	Sept. 1, 1910	203,000.00	7	14,210.00	Mar. and Sept.	9,900.00	Aug. 31.
Ottawa & Burlington R.R. Co. First Mortgage	April 1, 1909	500,000.00	6	30,000.00	April and Oct.		
The Southern Kansas Railway Co., Gulf Division. First Mortgage, Gold. Principal and Interest guaranteed by Atchison Co.	Sept. 1, 1926	4,336,000.00	5	216,800.00	Mar. and Sept.		
The Southern Kansas Railway Co. Income Bonds	July 1, 1927	1,480,000.00	6	88,800.00	May 1.		
		$11,118,000.00		$642,340.00		$40,936.57	
The Southern Kansas Railway Co. of Texas. First Mortgage, Gold. Principal and Interest guaranteed by Atchison Co.	Mar. 1, 1927	1,583,000.00	5	79,150 00	Mar. and Sept.		

CONTINGENT LIABILITIES ON BONDS OF OTHER AUXILIARY ROADS WHOSE EARNINGS AND EXPENSES ARE NOT INCLUDED WITH THOSE OF THE ATCHISON AND SOUTHERN KANSAS SYSTEMS.

BONDS OF OTHER AUXILIARY ROADS.	When Payable.	Amount Outstanding.	Interest.			Sinking Funds.	
			Rate.	Annual Interest.	When Payable.	Approximate Annual Am'nt.	When Payable.
Atchison, Topeka & Santa Fé R.R. Co., in Chicago. First Mortgage (Terminal), Gold. Principal and Interest guaranteed by Atchison Co.	Jan. 1, 1937	$3,000,000.00	5	$150,000.00	Jan. and July.		
Chicago, Santa Fé & California Railway Co. First Mortgage, Gold. Principal and Interest guaranteed by Atchison Co.	Jan. 1, 1937	15,000,000.00	5	750,000.00	Jan. and July.		
Chicago & St. Louis Railway Co. First Mortgage. Not guaranteed by Atchison Co.	Mar. 1, 1915	1,500,000.00	6	90,000.00	Mar. and Sept.		
California Southern R.R. Co. First Mortgage, Gold. Principal and Interest guaranteed by Atchison Co.	Jan. 1, 1926	2,081,000.00	6	124,860.00	Jan. and July.	$25,000.00	May 15.
Chicago, Kansas & Western R.R. Co. First Mortgage, Gold. Principal and Interest guaranteed by Atchison Co.	June 1, 1926	9,508,000.00	5	475,400.00	June and Dec.		
Gulf, Colorado & Santa Fé Railway Co. First Mortgage, Gold. Not guaranteed by Atchison Co.	July 1, 1909	12,216,000.00	7	855,120.00	Jan. and July.		
Gulf, Colorado & Santa Fé Railway Co. Second Mortgage, Gold. Not guaranteed by Atchison Co.	Oct. 1, 1923	7,494,000.00	6	449,640.00	April and Oct.		
Leavenworth, Topeka & South-western Railway Co. General Mortgage, Gold. Total issue, $1,380,000.00. Principal and Interest of $690,000.00 of the Bonds guaranteed by Atchison Co	July 1, 1912	690,000.00	4	27,600.00	Jan. and July.		
Sonora Railway Co. Limited. First Mortgage, Gold. Interest guaranteed by Atchison Co.	Jan. 1, 1910	4,050,000.00	7	283,500.00	Jan. and July.		
		$55,539,000.00		$3,206,120.00		$25,000.00	
Atlantic & Pacific R.R. Co. Guaranteed Trust Gold Bonds. Total issue, $17,562,000.00. Principal and Interest guaranteed severally, but not jointly, each one half, by the Atchison and St. Louis & San Francisco Companies	Jan. 1, 1937	8,781,000.00	4	351,240.00	Jan. and July.		
		$64,320,000.00		$3,557,360.00		$25,000 00	

EARNINGS OF THE A., T. & S. F. R.R. CO. AND THE SOUTHERN KANSAS RAILWAY CO. DURING THE YEAR 1887.

Accounts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Freight.......	$922,353.55	$851,792.78	$1,275,978.46	$1,150,108.48	$1,032,437.05	$1,018,850.76	$1,032,605.61	$1,018,005.36	$961,949.92	$1,078,443.05	$1,101,008.99	$804,809.76	$12,248,343.77
Passenger. ...	316,296.96	322,199.09	414,180.09	457,306.88	445,398.26	447,502.59	426,070.48	404,258.45	467,347.53	516,182.22	475,621.34	444,287.92	5,136,651.81
Mail..........	30,325.50	30,325.50	30,325.50	30,325.50	33,562.07	31,989.07	31,989.07	32,203.77	32,245.07	32,299.77	32,203.77	32,143.02	379,937.61
Express	29,932 33	27,446.73	29,932.32	29,104.25	29,932.80	30,420.95	30,418.14	30,853.53	30,677.42	32,108.31	31,885.82	32,808.81	365,521.41
Miscellaneous.	13,683.08	4,698.94	12,211.34	17,512.66	12,388.20	13,113.29	13,818.32	16,054.69	14,041.22	15,127.22	16,357.83	181,904.87	330,911.66
Totals....	$1,312,591.42	$1,236,463.04	$1,762,627.71	$1,684,357.77	$1,553,718.38	$1,541,876.66	$1,534,901.62	$1,501,375.80	$1,506,261.16	$1,674,160.57	$1,657,077.75	$1,495,954.38	$18,461,366.26

OPERATING EXPENSES OF THE A., T. & S. F. R.R. CO. AND THE SOUTHERN KANSAS RAILWAY CO. DURING THE YEAR 1887.

Accounts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Maintenance of Way.													
Repairs and renewal of roadway and track	$105,338.84	$118,762.96	$139,941.61	$206,942.22	$193,266.11	$171,311.96	$136,328.77	$140,884.26	$136,280.70	$101,196.19	$170,661.45	$178,186.03	$1,799,101.10
Repairs of fences, crossings, etc.	3,021.40	1,844.90	2,488.58	3,191.31	3,947.74	2,785.06	2,955.79	2,103.42	2,720.62	2,637.53	1,945.27	1,830.45	31,472.07
Repairs of bridges....................	12,152.63	12,479.80	9,763.53	20,291.82	28,457.06	18,311.65	25,207.73	15,719.33	17,806.64	16,960.13	11,782.09	3,988.18	192,920.59
Renewal of bridges....................	1,575.07	3,341.28	10,013.41	11,057.09	10,360.46	12,815 19	12,458.96	7,694 88	11,072.02	21,349.29	9,055.54	7,745.73	118,538.92
Maintenance of Buildings.													
Repairs of buildings and shops.........	10,836.46	14,653.37	15,196.88	17,233.20	24,427.54	23,010.99	18,761.03	13,672.65	13,370.58	13,348.78	6,927.61	7,237.97	178,677.06
Renewal of buildings and shops........	3,399.99	2,298.83	2,498.66	7,877.82	6,809.15	5,672.21	10,035.49	4,698.91	7,423.13	5,142.86	1,105.31	2,148.13	59,110.49
Maintenance of Rolling Stock.													
Repairs and renewal of freight cars	73,886.71	82,526.88	68,784.86	78,654 07	71,436 32	72,174.13	75,503.43	85,648.30	67,044.06	68,258.75	53,613.84	46,952.13	844,483.48
" " " " passenger cars..	30,647.07	22,913.56	25,130.06	29,786.71	26,004.71	28,817.93	28,906.06	28,793.03	25,522 33	23,239.33	18,303.42	*cr.* 9,655.44	278,408.77
" " " " locomotives	35,417.50	49,687.55	45,025.15	45,339 05	43,549.72	40,066 58	44,001.19	33,839.81	46,903.50	43,362.23	47,700.26	20,367.78	495,260.32
Transportation and Traffic.													
Locomotive service..........................	63,864.36	65,257.37	66,597.92	70,500.23	70,236.42	71,637.04	69,083.87	75,629.90	71,493.00	74,353.37	78,221.17	73,966.08	850,840.73
Locomotive expenses, fuel	84,420.39	81,819.77	95,992.94	78,760.46	85,535.51	82,016 51	83,480.73	61,813.25	85,038.57	87,528.10	91,113.10	90,404.16	1,007,923.49
" " oil, waste, etc.....	22,917.66	20,146.57	20,647.47	20,047.48	21,831 23	22,316.61	23,077.60	23,834 50	22,852.61	21,105.81	18,855.42	23,028.27	260,661.23
Water stations, service and expenses....	9,377.44	6,833.12	8,063.38	13,663.59	9,278.53	7,996.79	11,865.71	9,565.87	12,388.56	9,418.73	8,181.45	12,338.83	118,972.00
Train and car service and expenses	68,197.02	63,952.42	76,119.65	70,173.34	75,818.77	72,665.52	76,666.56	77,601.83	83,696.21	81,167.30	81,568.53	84,521.84	912,148.99
Car mileage..............................	6,996.12	3,825.25	8,315.47	19,655.39	27,080.97	4,821.88	21,852.47	18,609 86	8,335.25	14,721.76	9,638.81	*cr* 14,461.09	129,392.14
Loss and damage.......................	13,803.74	19,537.12	8,532.81	10,113.76	11,119.38	14,302.69	26,507.56	12,078.66	16,363.28	15,449.41	14,368.26	37,977.08	200,153.75
Telegraph service and expenses	15,781.83	15,527.76	14,434 62	15,613.38	16,029.27	18,934.87	16,932.60	18,463 05	19,083.76	16,809.50	18,110.27	19,151.28	204,872.19
Station service and expenses	74,421.05	73,464.50	83,717 21	74,791.64	73,292.44	75,235.64	78,120.90	78,643.08	81,270.54	81,848.40	86,485.51	78,586.10	939,877.01
Traffic and divisional superintendence...	24,259.41	23,260.43	23,660.09	23,163.22	24,606.74	24,711.04	25,208.09	26,586.76	25,047.34	27,514.89	25,225.60	25,698 52	298,942.13
Rentals..................................	193.83	225.02	141.21	824.77	51.93	211.35	269.71	694.43	370.45	212.33	451.29	*cr.* 3,465.76	180 56
Stationery, printing, and tickets.........	16,236.44	10,905.69	5,874.80	10,785.90	4,404.23	5,415.58	8,832.15	8,320.89	7,437 35	11,676.33	8,826.48	8,002.55	106,718.39
Advertising.................................	1,719.74	2,050.80	4,727.50	3,677.36	1,637.05	2,597.09	4,605.07	1,820.35	5,713.18	6,372.38	3,999.95	5,584.07	44,504.54
Foreign agency..........................	16,823.80	13,732.19	13,813.80	16,291.45	16,818.68	15,264.33	16,379.11	16,146.36	17,664.23	18,214.40	15,801.02	16,112.40	193,061.77
Miscellaneous...........................	4,557.53	4,894.59	5,661.39	4,337.22	5,726.75	6,253.27	11,562.66	9,480.66	15,482.23	8,936.52	9,849.27	15,172.03	101,914.12
General.													
General expenses	21,341.32	21,753.58	22,041.27	22,599.27	24,036.20	22,386.38	22,252,48	21,408.02	23,064.25	24,731.98	23,136.79	64,025.13	312,776.67
Legal department......................	7,243.45	7,587 12	8,211.77	17,508.67	16,708.86	9,025 87	8,073.85	16,269.91	8,509.44	9,448.98	9,292.47	22,960.90	140,841.29
Insurance	3,075.00	3,075.00	3,075.00	3,075.00	3,075.00	3,075.00	3,075.00	3,075.00	3,075.00	3,075.00	3,075.00	1,712.27	35,537.27
Totals.............................	$731,505.80	$746,357.43	$788,471.04	$895,955.42	$895,546.77	$833,833 16	$862,004.57	$813,096.97	$835,028.83	$808,080.28	$827,295.18	$820,115.62	$9,857,291.07

ATCHISON, TOPEKA & SANTA FÉ RAILROAD COMPANY AND THE SOUTHERN KANSAS RAILWAY COMPANY

COMPARATIVE STATEMENT OF EARNINGS AND OPERATING EXPENSES FOR THE YEARS 1887 AND 1886.

Earnings.	1887.	1886.	Increase.	Decrease.
Freight	$12,248,343.77	$11,100,967.13	$1,147,376.64	
Passenger	5,136,651.81	4,026,004.89	1,110,646.92	
Mail	379,937.61	339,845.65	40,091.96	
Express	365,521.41	354,560.61	10,960.80	
Miscellaneous	330,911.66	162,928.91	167,982.75	
Totals	$18,461,366.26	$15,984,307.19	$2,477,059.07	

Increase of Earnings, $2,477,059.07.

Operating Expenses.	1887.	1886.	Increase.	Decrease.
Repairs and renewal of roadway and track	$1,799,101.10	$1,765,067.60	$34,033.50	
Repairs of fences, crossings, etc	31,472.07	36,108.56		$4,636.49
Repairs of bridges	192,920.59	162,459.78	30,460.81	
Renewal of bridges	118,538.92	66,936.14	51,602.78	
Repairs of buildings and shops	178,677.06	140,526.20	38,150.86	
Renewal of buildings and shops	59,110.49	15,668.99	43,441.50	
Repairs and renewal of freight cars	844,483.48	711,569.86	132,913.62	
" " " " passenger "	278,408.77	266,970.44	11,438.33	
" " " " locomotives	495,260.32	417,179.42	78,080.90	
Locomotive service	850,840.73	653,748.74	197,091.99	
Locomotive expenses, fuel	1,007,923.49	752,388.36	255,535.13	
" " oil, waste, etc	260,661.23	215,378.77	45,282.46	
Water stations, service and expenses	118,972.00	92,282.09	26,689.91	
Train and Car service and expenses	912,148.99	665,488.73	246,660.26	
Car mileage	129,392.14	30,985.89	98,406.25	
Loss and damage	200,153.75	153,133.89	47,019.86	
Telegraph service and expenses	204,872.19	167,789.01	37,083.18	
Station service and expenses	939,877.01	800,741.53	139,135.48	
Traffic and divisional superintendence	298,942.13	234,476.02	64,466.11	
Rentals	180.56	24,588.52		24,407.96
Stationery, printing, and tickets	106,718.39	65,084.45	41,633.94	
Advertising	44,504.54	37,040.70	7,463.84	
Foreign agency	193,061.77	163,147.82	29,913 95	
Miscellaneous	101,914.12	72,065.55	29,848.57	
General expenses	312,776.67	278,130.35	34,646.32	
Legal expenses	140,841.29	96,534.12	44,307.17	
Insurance	35,537.27	35,464.97	72.30	
Totals	$9,857,291.07	$8,120,956.50	$1,765,379.02	$29,044.45

Increase of Expenses, $1,736,334.57.

STATEMENT OF ROLLING STOCK, DECEMBER 31, 1887.

Description.	Owned by		Total.
	A., T. & S. F., The So. Kansas, and other Companies.	Topeka Equipment Co.	
Locomotives	532	18	550
Passenger Cars:—			
Coaches	218	3	221
Coach and Baggage	19	3	22
Baggage, mail, and express, etc.	146	8	154
Mail, coach, and baggage	10	2	12
Chair	4	....	4
Observation	10	....	10
Officers	6	1	7
Pay	3	....	3
Emigrant sleeping	56	....	56
Pullman drawing-room sleeping (half-interest)	34	....	34
Pullman buffet sleeping (half-interest)	4	....	4
Total	510	17	527
Freight Cars:—			
Fruit	246	....	246
Refrigerator	19	....	19
Box	5,039	211	5,250
Combination	580	19	599
Stock	1,647	....	1,647
Flat	1,664	38	1,702
Coal	4,007	59	4,066
Way	207	10	217
Total	13,409	337	13,746
Sundry Cars:—			
Water	4	....	4
Boarding	2	....	2
Store-room box	3	....	3
Oil flats	4	....	4
Pile drivers	6	....	6
Derrick	7	....	7
Tie spotter	1	....	1
Snow flangers	3	....	3
Total	30		30

RECAPITULATION.

	Total, A., T. & S. F., The So. Kansas, and other Companies, Dec 31, 1886.	Additions in 1887.	Total, Dec. 31, 1887.
Locomotives	390	160	550
Passenger cars	317	210	527
Freight "	10,895	2,851	13,746
Sundry "	29	1	30
Total cars	11,241	3,062	14,303

ATCHISON, TOPEKA & SANTA FÉ R.R. CO. AND THE SOUTHERN KANSAS RAILWAY CO.

DETAILS OF COST OF REPAIRS AND MILES RUN BY LOCOMOTIVES DURING THE YEAR 1887.

Miles run by Freight Engines,	7,106,839
" " Passenger Engines,	3,700,203
" " Miscellaneous Engines,	412,016
" " Switch Engines,	2,076,493
" " Work Engines,	342,739
Total Miles run by Engines,	13,638,290

Waste used,	183,458½	lbs.
Tallow used,	982	lbs.
Oil used (lubricating, 1,255,111 pts.),	1,597,766	pints.
Coal used,	519,676$\frac{625}{2000}$	tons.
Wood used,	13,773$\frac{11}{16}$	cords.

Wages of Engineers, Firemen, and Wipers,		$1,008,723.12
Repairs of Locomotives, Labor,	$300,209.71	
" " Material,	211,460.81	511,670.52
Cost of Oil, Waste, and Tallow used,		79,230.46
" Miscellaneous Supplies,		52,709.80
" Coal,		984,816.80
" Wood,		41,450.36
Total Cost of Labor and Material,		$2,678,601.06

Cost per mile run (in cents) for Oil, Waste, etc.,	.58
" " " " " Miscellaneous Supplies,	.39
Cost per mile run (in cents) for Fuel,	7.52
" " " " " Engineers, Firemen, and Wipers,	7.40
Cost per mile run (in cents) for Locomotive Repairs,	3.75
Total Cost per mile run (in cents),	19.64

Average number of miles run to ton of Coal,	26.24
" " " " pint of Oil (all kinds),	8.53
" " " " pint of Oil (lubricating),	10.86
Cost of Wood per cord,	1.89\frac{51}{100}$
Cost of Coal per ton,	3.00$\frac{94}{100}$

NOTE.—This statement includes the cost of running locomotives employed on track and other work which in the operating accounts is charged to the work done.

LAND DEPARTMENT REPORT.

STATEMENT No. 1.

OPERATIONS FOR THE YEAR.

There were no sales of land in 1887.

During the year there were cancelled and restored to the market 1,188.53 acres, representing $2,688.00 principal.

The cash receipts of the Department were as follows:—

From Deferred payments,	$509,103.29
" Miscellaneous,	457.68
	$509,560.97

The expenditures were as follows:—

Salaries, office expenses, agents, etc.,	$8,134.96
Agents' expenses, advertising, etc.,	754.90
Rebates and other arbitrary expenses,	1,160.40
	$10,050.26
Deduct taxes refunded, $301.12, less amount paid, $171.91,	129.21
	$9,921.05

The net income of the year—applicable to the payment of interest and expenses, etc., of the Trust and to the redemption of Land Bonds—was $499,639.92.

STATEMENT No. 2.

OPERATIONS SINCE ORGANIZATION.

The sales of the Department since its organization have been:

For Cash,	1,514,687.77	acres,	$4,831,031.71
On Time,	1,811,709.36	"	7,887,158.47
	3,326,397.13	"	$12,718,190.18

Being an average of $\$3\frac{82}{100}$ per acre.

The cancellation of contracts since the organization of the Department, arising from non-improvement, non-payment, and other causes, has been 397,809.49 acres for $1,854,081.26 principal and $556,450.17 interest.

The total cash receipts have been:—

From Principal, ...	$9,907,482.56
" Interest, ...	1,529,372.64
" Miscellaneous, ...	36,447.08
	$11,473,302.28

This total cash received has been disbursed as follows:—

Expenses since organization, ...	$1,635,920.80
Taxes since organization, ...	1,175,703.07
Paid to Boston Office for Interest on Land Bonds, Redemption of Land Bonds, and Expenses of Land Trusts (see note), ...	8,661,678.41
	$11,473,302.28

STATEMENT No. 3.

COMPENDIUM OF WESTERN OFFICE TRIAL BALANCE, DEC. 31, 1887.

Debits.

Net Sales,—Principal, ...	$10,864,108.92
Interest and Miscellaneous,—Net, ...	1,699,650.36
	$12,563,759.28

Credits.

Expenses of Land Department since organization, . .	$1,635,920.80
Taxes since organization, ...	1,175,703.07
Discounts made for improvements, ...	191,013.65
Discounts for payments in advance, ...	85,320.29
Unpaid principal of land contracts, ...	715,083.45
Unpaid interest of land contracts, ...	99,039.61
Balance paid Boston Office, ...	8,661,678.41
	$12,563,759.28

BOSTON, April 21, 1888.

NOTE from Comptroller and General Auditor:—

To the amount received from the Land Department, namely,		$8,661,678.41
There has been added for miscellaneous receipts, interest, and allowance to the Trustees of the Land Grant to Dec. 31, 1887, ...		558,702.47
		$9,220,380.88
And there has been paid to the same date:—		
Interest on Land Grant Bonds, ...	$3,069,270.85	
Interest on Land Income Bonds, ...	294,318.69	
Expenses, etc., of Land Trusts, ...	28,378.88	
Land Grant Bonds purchased and cancelled, ...	1,109,000.00	
Land Income Bonds purchased and cancelled, ...	480,000.00	
		4,980,968.42
Balance of account Dec. 31, 1887, ...		$4,239,412.46

STATEMENT No. 4.

SUMMARY GENERAL CONDITION, DEC. 31, 1887.

The outstanding Land Grant Bonds, Dec. 31, 1887, were $2,411,500.00

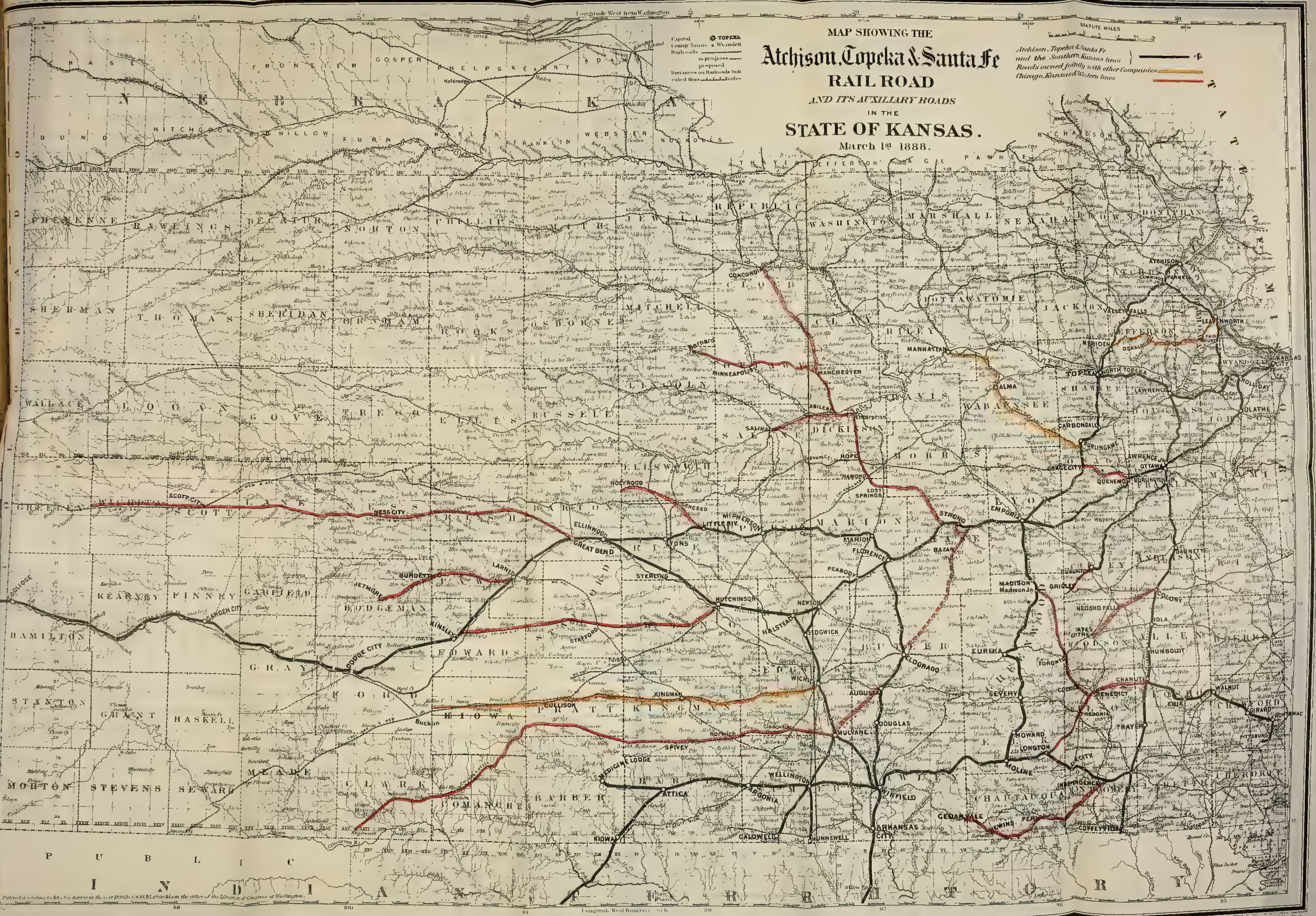
Against this indebtedness there were the following assets: —

Unpaid principal of land contracts, ...	$715,083.45
Balance of account, Dec. 31, 1887, ...	4,239,412.46
	$4,954,495.91

A. S. JOHNSON,
Land Commissioner.

NOTE.—In the general balance sheet of the Atchison Company, the liabilities include the outstanding Land Grant Bonds as above stated, $2,411,500.00, although the Trustees hold collateral securities fully covering the same; but no portion of the $4,954,495.91 has been included in the assets.

CALIFORNIA STATE LIBRARY



MAP SHOWING THE

Atchison, Topeka & Santa Fe

RAIL ROAD

AND ITS AUXILIARY ROADS

IN THE

STATE OF KANSAS.

March 1st 1888.

Entered according to Act of Congress in the year 1886 by G.W. & C.B. Colton & Co. in the Office of the Librarian of Congress at Washington.

Prepared by G.W. & C.B. Colton & Co. 182 William St. New York

7[illegible]

SEVENTEENTH

ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Atchison, Topeka and Santa Fé Railroad Co.

TO

THE STOCKHOLDERS

FOR THE

YEAR ENDING DECEMBER 31, 1888.

BOSTON:
PRESS OF GEO. H. ELLIS, 141 FRANKLIN STREET.
1889.

CAL[illegible] LIBRARY

SEVENTEENTH

ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

Atchison, Topeka and Santa Fé Railroad Co.

TO

THE STOCKHOLDERS

FOR THE

YEAR ENDING DECEMBER 31, 1888.

BOSTON:
PRESS OF GEO. H. ELLIS, 141 FRANKLIN STREET.
1889.

CALIFORNIA STATE LIBRARY

SCALE 1:3,600,000
STATUTE MILES 60 TO ONE INCH
0
50
100
150
A.T. & S.F. R.R. and its auxiliary Roads
Connecting Lines of other Companies
Roads owned jointly with other Cos
Gulf, Colorado & Santa Fe R'w'y
PACIFIC OCEAN
GULF OF MEXICO
NEVADA
UTAH
WYOMING
NEBRASKA
COLORADO
KANSAS
MISSOURI
ILLINOIS
CALIFORNIA
ARIZONA
NEW MEXICO
INDIAN TERRITORY
ARKANSAS
TEXAS
LOUISIANA
LOWER CALIFORNIA
SONORA
CHIHUAHUA
MEXICO
ATCHISON, TOPEKA & SANTA FE R.R.
LONGITUDE WEST 106 FROM GREENWICH

MAP SHOWING THE

Atchison, Topeka and Santa Fe

RAILROAD SYSTEM,

with its Connections.

March 1st 1889.

Prepared by G. W. & C. B. Colton & Co. 182 William St. New York

Entered according to Act of Congress in the year 18[illegible] by [illegible] in the Office of the Librarian of Congress at Washington

79375

INV. 1898

DIRECTORS AND OFFICERS

OF THE

Atchison, Topeka and Santa Fé Railroad Company.

DECEMBER 31, 1888.

DIRECTORS.

I. T. BURR,	Boston, Mass.
B. P. CHENEY,	" "
C. R. CODMAN,	" "
C. K. HOLLIDAY,	Topeka, Kan.
GEORGE C. MAGOUN,	New York, N.Y.
A. W. NICKERSON,	Boston, Mass.
E. B. PURCELL,	Manhattan, Kan.
WARREN SAWYER,	Boston, Mass.
L. SEVERY,	Reading, Kan.
GEO. O. SHATTUCK,	Boston, Mass.
ALDEN SPEARE,	" "
W. B. STRONG,	" "
W. F. WHARTON,	" "

GENERAL OFFICERS.

WM. B. STRONG, *President*,	Boston, Mass.
C. W. SMITH, *First Vice-President*,	" "
A. A. ROBINSON, *Second Vice-President*,	Topeka, Kan.
J. F. GODDARD, *Third Vice-President*,	Chicago, Ill.
GEO. R. PECK, *General Solicitor*,	Topeka, Kan.
GEO. W. McCRARY, *General Counsel*,	Kansas City, Mo.
E. WILDER, *Secretary and Treasurer*,	Topeka, Kan.
JNO. P. WHITEHEAD, *Comptroller*,	Boston, Mass.
JOSEPH W. REINHART, *General Auditor*,	" "
GEO. L. GOODWIN, *Ass't Treasurer*,	" "
C. S. TUCKERMAN, *Ass't Secretary*,	" "
ALFRED A. GLASIER, *Transfer Agent*,	" "

OFFICERS ON THE LINE.

A. A. ROBINSON, *Second Vice-President and Manager*,	Topeka, Kan.
J. F. GODDARD, *Third Vice-President*,	Chicago, Ill.
GEO. R. PECK, *General Solicitor*,	Topeka, Kan.
E. WILDER, *Secretary and Treasurer*,	" "
H. C. CLEMENTS, *Auditor*,	" "
GEO. L. SANDS, *General Superintendent*,	" "
A. S. JOHNSON, *Tax and Land Commissioner*,	" "
A. C. ARMSTRONG, *Purchasing Agent*,	Chicago, Ill.

MILEAGE OF THE ATCHISON, TOPEKA & SANTA FE RAILROAD AND AUXILIARY ROADS, DEC. 31, 1888.

		Miles
I. Atchison System:—		
Atchison, Topeka & Sante Fé R.R.:		
Atchison to western boundary of Kansas,		470.58
Kansas City, Topeka & Western R.R.:		
Kansas City to Topeka (exclusive of 4.10 miles of second track between Kansas City and Argentine),		66.32
Levenworth, Northern & Southern Railway:		
Wilder (on K. C., T. & W. R.R.) to Cummings Junction (on A., T. & S. F. R.R.),		46.19
Kansas City, Emporia & Southern Railway:		
Emporia to Moline,		84.27
Florence, Eldorado & Walnut Valley R.R.:		
Florence to Winfield,		72.73
Marion & McPherson Railway:		
Florence to Ellinwood,		98.61
Wichita & South-western Railway:		
Newton to Arkansas River,	79.16	
Mulvane to Caldwell, including extension at Wellington,	42.67	
Sedgwick to Halstead,	8.89	130.72
Pueblo & Arkansas Valley Railroad:		
Kansas State Line to South Pueblo,	150.23	
South Pueblo to Cañon City,	40.27	
Branches to coal mines,	7.08	
La Junta to New Mexico State Line,	96.58	294.16
Denver & Santa Fé Railway:		
South Pueblo to Denver, including Circle Road in Denver,		124.27
New Mexico & Southern Pacific Railroad:		
New Mexico State Line to San Marcial,	353.97	
Santa Fé Branch,	18.12	372.09
Rio Grande, Mexico & Pacific Railroad:		
San Marcial to Deming,	129.04	
Rincon to Texas State Line,	57.04	186.08
Silver City, Deming & Pacific Railroad:		
Deming to Silver City,		48.29
Rio Grande & El Paso Railroad:		
Texas State Line to El Paso,		20.15
New Mexican Railroad:		
Socorro to Magdalena,	30.96	
Nutt to Lake Valley,	13.31	
San Antonio to Carthage,	9.64	
Las Vegas to Hot Springs,	8.27	
Dillon Junction to Blossburg,	5.93	68.11
Total Atchison System,		2,082.57
II. Southern Kansas System:—		
Holliday, Kan., to Pan Handle City, Texas,	546.56	
Lawrence Junction to Lawrence,	25.80	
Ottawa to Emporia,	56.42	
Burlington Junction to Burlington,	42.21	
Chanute to Pittsburg,	60.55	
Cherryvale to Coffeyville,	16.30	
Arkansas City, Kan., to Purcell, Ind. Ter.,	154.48	
Wellington to Hunnewell,	18.35	
Attica to Medicine Lodge,	21.26	
Total Southern Kansas System,		941.93
Total Atchison, Topeka & Santa Fe R.R. and System-Proper,		3,024.50

III. SONORA SYSTEM:—	Miles
New Mexico & Arizona Railroad:	
Benson to Nogales (on Mexican boundary),	87.78
Sonora Railway,	
Nogales to Guaymas (Mexico),	262.41
Total Sonora System,	350.19
IV. OWNED JOINTLY WITH OTHER RAILROAD COMPANIES:—	
Leavenworth, Topeka & South-western Railway:	
Leavenworth to Meriden Junction,	46.30
Manhattan, Alma & Burlingame Railway:	
Burlingame to Manhattan,	56.62
Wichita & Western Railroad:	
Wichita to Kingman,	44.93
Kingman, Pratt & Western Railroad,	
Kingman to west line Kiowa County,	79.71
Total owned jointly,	227.56

SUMMARY.

Atchison System-Proper,	3,024.50	
Sonora System,	350.19	
Owned jointly (one-half mileage),	113.78	3,488.47

In addition to the above, the Atchison Company either owns entirely or controls the following mileage:—

Chicago, Santa Fé & California Railway:			
* Main line, Chicago to Kansas City,	439.94		
Branch to Pekin, Ill. (including 5.91 miles leased),	58.31		
A., T. & S. F. R.R. in Chicago (leased by C., S. F. & C. Ry.),	2.12	500.37	
St. Joseph, St. Louis & Santa Fé Railway:			
Lexington Junction to St. Joseph, and St. Joseph to Winthrop (opposite Atchison),		97.20	
St. Louis, Kansas City & Colorado R.R.:			
St. Louis to Union and branch (including 4.50 miles leased),		61.40	
Chicago, Kansas and Western lines,		943.29	
Gulf, Colorado & Santa Fé Railway,		1,058.00	
California Southern Railroad,		210.61	
California Central Railway,		269.09	3,139.96
And controls jointly with the St. Louis & San Francisco Railway Co. the Atlantic & Pacific Railroad,			914.46
Also owns one-half of the Kansas City Belt Railway (the other half being owned by the C. M. & St. P. Ry. Co. and K. Cy., F. S. & M. R.R. Co.):			
Double and Side Track, 26.65. Main Track,			9.84

---

* Includes,	Miles
Sibley Bridge,	.76
Mississippi River R.R. and Toll Bridge,	.61
Total,	1.37

OFFICE OF THE PRESIDENT

Atchison, Topeka and Santa Fé Railroad Company.

95 MILK STREET, BOSTON.

Boston, April 24, 1889.

To the Stockholders of the

Atchison, Topeka & Santa Fé Railroad Company: —

Your Directors submit the following report of the operations of the Company for the year ending Dec. 31, 1888.

On the two preceding pages will be found the mileage of the roads owned wholly or in part by this Company at the close of the year.

Since the close of 1887, the Southern Kansas Lines have been leased to the Atchison Company, and are therefore treated the same as other leased lines, forming what is now considered as the Atchison system proper, the operations of which are given in this report as one property. This is followed by a consideration of the various causes which have affected the business of the Company during the year and the usual statements of Construction, Expenditure, Capital Stock, Bonded Debt, and other accounts. Combined with the report will also be found full statements of the Income Accounts, Balance Sheets and Statistics respecting the Atchison system proper, the Land Department and the various leased and proprietary properties owned or controlled by the Atchison Company, as well as a general summary showing the results for the year to the Atchison Company of all its properties, owned or controlled.

EARNINGS AND EXPENSES OF THE ATCHISON SYSTEM.

EARNINGS.

TRAFFIC:—			
Freight,		$10,194,042.93	
Passenger,		4,335,642.92	
U. S. Mails,		423,123.63	
Express,		463,063.94	
Miscellaneous,		197,039.83	
GROSS EARNINGS FROM OPERATIONS,			$15,612,913.25
OPERATING AND GENERAL EXPENSES, 66.5%,			10,387,815.10
NET EARNINGS, 33.5%,			5,225,098.15
ADD — RECEIPTS for Interest on Bonds of Railroad Companies which are owned by A., T. & S. F. R.R. Co., and used as Collateral on "A., T. & S. F. R.R. Co.'s Collateral Trust 5% Bonds,"		621,690.00	
RECEIPTS from:—			
RENTAL OF PLANT, viz.:			
Rolling Stock,	216,393.78		
Track,	68,235.20	284,628.98	906,318.98
			$6,131,417.13
DIRECT FIXED CHARGES.			
INTEREST ON BONDS:—			
(A., T. & S. F. Issues),	2,568,565.05		
Less Int. Land Grant Bonds provided for by receipts from Land Grant Trustees,	168,805.00	2,399,760.05	
INTEREST ON GUARANTEE NOTES,		11,300.83	
RENTALS:			
Leased Roads of System (Interest on their Bonds),		1,588,641.06	
TAXES,		639,346.75	
SINKING FUND REQUIREMENTS:			
Paid,	328,665.25		
Accrued,	1,060.00	329,725.25	
TOTAL FIXED CHARGES,			4,968,773.94
TOTAL PROFIT OF THE RAILROAD,			1,162,643.19
Amount carried forward,			$1,162,643.19

Amount brought forward,			$1,162,643.19
DEDUCT SUNDRY CONTRACT CHARGES, viz.:—			
Payment to St. Louis & San Francisco Ry Co. under agreement of Oct. 5, 1886,		420,016 88	
Rebate of 10% allowed to C., K. & W. R.R. Co. on Earnings from Interchanged Business,		69,142.95	
		489,159.83	
Deduct one year's interest on Sonora Railway 1st Mortgage Bonds, paid,		283,500.00	772,659.83
Balance,			389,983.36
Add — RECEIPTS FROM OTHER SOURCES:—			
Income from Investments,	Cr. 139,826.17		
Sundry Profits, Less Debits, Net,	Cr. 139,093.20		
General Interest and Discount, Net,	Cr. 438,210.31		717,129.68
Profit of the Company,			1,107,113 04
Charges for Dividends, applicable to the period:			
No. 35, Payable May 15,	1,125,000.00		
No. 36, " Aug. 15,	1,125,000.00		
No. 37, " Nov. 15,	375,000.00		2,625,000.00
Deficiency for the 12 Months to Dec. 31, 1888,			1,517,886.96
Surplus Dec. 31, 1887,		7,888,620.77	
Add Credit Balance of Sundry Profit and Loss items, applicable to period prior to Jan. 1, 1888,		64,817.34	
Total Surplus Credit to Dec. 31, 1887,			7,953,438.11
NET SURPLUS, Dec. 31, 1888,			**$6,435,551.15**

ATCHISON, TOPEKA & SANTA FE R.R. COMPANY
AND SYSTEM PROPER.

Operations of 1888 compare with 1887, as follows:

	1888.	1887.	Increase or Decrease.
Miles of Road, Dec. 31, .	3,024.50	3,016.35	*Inc.* 8.15
Average number of miles operated, ...	3,020.17	2,622.40	*Inc.* 397.77
Gross Earnings, . . .	$15,612,913.25	$18,461,366.26	*Dec.* $2,848,453.01
Operating expenses (excluding Taxes), . .	$10,387,815.10	$9,857,291.07	*Inc.* $530,524.03
Operating expenses (including Taxes), . .	$11,027,161.85	$10,408,454.78	*Inc.* $618,707.07
Net Earnings (excluding Taxes), ...	$5,225,098.15	$8,604,075.19	*Dec.* $3,378,977.04
Net Earnings (deducting Taxes), ...	$4,585,751.40	$8,052,911.48	*Dec.* $3,467,160.08
Per cent. Operating Expenses to Earnings (excluding Taxes), . .	66.53	53.39	*Inc.* 13.14
Per cent. Operating Expenses to Earnings (including Taxes), . .	70.63	56.38	*Inc.* 14.25
Gross Earnings per average mile operated, . .	$5,169.55	$7,039.87	*Dec.* $1,870.32
Operating Expenses per average mile operated (excluding Taxes), .	$3,439.48	$3,758.88	*Dec.* $319.40
Operating Expenses per average mile operated (including Taxes), .	$3,651.17	$3,969.05	*Dec.* $317.88
Net Earnings per average mile operated (excluding Taxes), . .	$1,730.07	$3,280.99	*Dec.* $1,550.92
Net Earnings per average mile operated (deducting Taxes), . .	$1,518.38	$3,070.82	*Dec.* $1,552.44
Total Passengers carried East, ...	916,040	1,023,094	*Dec.* 107,054
Total Passengers carried West, ...	1,012,759	1,116,529	*Dec.* 103,770
Gross Passenger Earn'gs East, ...	$1,861,037.12	$2,191,873.50	*Dec.* $330,836.38
Gross Passenger Earn'gs West, ...	$2,474,605.80	$2,944,778.31	*Dec.* $470,172.51
Tons Freight carr'd East,	1,399,954	1,464,945	*Dec.* 64,991
Tons Freight car'd West,	1,582,877	2,374,633	*Dec.* 791,756
Gross Freight Earnings East, ...	$3,874,865.13	$3,523,528.92	*Inc.* $351,336.21
Gross Freight Earnings West, ...	$6,319,177.80	$8,724,814.85	*Dec.* $2,405,637.05

EARNINGS.

The earnings for the year 1888 are $2,848,453.01 less than during the preceding year,— a decrease of 15$\frac{4}{10}$ per cent. Of this decrease, it will be observed that $801,008.89 is the loss on our passenger business, and $2,054,300.84 is the loss on freight traffic. The number of passengers carried one mile was 1,928,799, against 2,139,623 during 1887; and the average rate received per passenger per mile was 2.271 cents per mile, against 2.357 cents per mile in 1887. Had the same rate been received in 1888 as in 1887, the passenger earnings would have been increased $164,140.69, which would still have left a decrease of $636,868.20, representing an absolute loss of business.

The number of tons of freight carried one mile during 1888 was 810,593,805, as against 909,167,842 in 1887, showing a decrease of 98,574,037 tons. The average rate per ton per mile was 1.258 cents in 1888, against 1.347 in 1887, showing a decrease in the rate of .089 cents. If the same rate per ton per mile had been received in 1888 as was received in 1887, the freight earnings would have been increased $721,428.48, leaving still a decrease of $1,332,872.36 from the freight earnings of 1887 on account of actual decrease of business.

It will be seen from these figures that, even with the additional traffic derived by the Atchison System from its recent extensions and additions, the actual number of passengers and tons of freight transported was considerably less than during the preceding year; and it is obvious that, except for the business coming to it from its newly constructed lines, its earnings must have shown a greater decrease still.

This reduction of business is due to various causes: first, the unusually light crops for two successive years and the consequent depression of all kinds of business throughout our entire territory. A community chiefly agricultural — such as that served by our system of roads — does not accumulate wealth rapidly, and the loss of a single year's crop is seriously felt; while a loss of crops for two successive seasons becomes almost disastrous, affecting every business, enforcing every economy, and delaying every improvement. Naturally, railroads in such regions feel the misfortune of poor crops as speedily and completely as the people themselves, since they lose the transportation not only of the products of the soil, but also that of merchandise, building materials, and other articles, the consumption of which is lessened at once with diminished prosperity.

The earnings have been, further, greatly reduced through the construction of new lines in Kansas by other Companies, which have covered our territory with a network of railroads reaching almost every point of consequence on our lines, and dividing with us the business which has heretofore sought our road.

Following the opening of these new lines came active and vigorous competition for the diminished business and reductions of rates, which had to be met to retain our traffic, but which under the provisions of the

Interstate Commerce Bill we could meet only at the cost of proportionate reductions to and from almost all other points on our lines, whether they were reached by our competitors or not. Before the enactment of that law, this competition could and would have been regulated by an arranged division of business between the lines; but, any such arrangement being now prohibited, the competition was continued with the usual result of loss to all interests and advantage to none.

RATES.

In common with all railroads, and particularly with those of the West, we have suffered largely from unremunerative rates. Many causes have contributed to the existing trouble in this respect. First should be counted a tendency to low rates, which has long been growing, and which owes its existence to a variety of reasons. Temporary reductions rapidly become permanent; while it is with the greatest difficulty that an advance in rates, either temporary or permanent, can be maintained. The fixing of rates is a subject of great complexity and difficulty at best. A vast number of elements enter into it. Conditions so variable and so intricate have to be taken into consideration that the question, what are just and reasonable rates,—that is, what rates will produce a fair return upon invested capital — is only capable of an approximate answer. The difficulty is increased by the fact that, in dealing with it, a railroad company is beset with obstacles not connected with the subject itself, but created by those whose interests, either real or apparent, are adverse to those of the railroad. The public voice, whether speaking through legislative bodies, administrative officers, or business communities, invariably favors lower rates. The competition between individuals, localities and commercial centres, not less than that between railroads themselves, stimulates the downward tendency. With all these influences working in practical combination to reduce the earning power of railroads, their right to make any combination for self-protection has been denied by State and National enactments. The theory of these laws is radically false, because they overlook the fact that the public interest requires stability in rates, not less than that they should be fair and reasonable. Nothing can be more certain than that unrestrained competition, artificially stimulated by public sentiment, is productive of far more evil than good. The recent amendment of the Interstate Commerce Act, by which reductions of rates without notice is forbidden, is a recognition of this principle, to be followed, it is hoped, by other needed changes. The long and short haul clause is another feature of the Interstate Commerce Act which was no doubt intended to secure justice and prevent discrimination as between localities. But the actual effect has been to build up certain towns and cities at the expense of others, to disarrange the commerce of the country, to force business into unnatural channels, and to enlarge the traffic of a few lines while crippling and destroying that of many. For the sake of attaining an abstract and intangible equality, it has driven railroads out of business at one point under penalty of losing it at many others.

To deal with these discouraging conditions has been a most difficult task, but to them have been added many others which should be mentioned. In several of the Western States, rates have been established by law which are ruinously low; and, although our system has been comparatively free from this injustice, it will be easily seen that we cannot entirely escape its effects. When rates in Iowa are arbitrarily forced down, the difficulty of maintaining fair rates in adjoining States is immeasurably increased. It is but natural that Nebraska and Kansas should object to paying what transportation is worth when Iowa and Illinois can get it for much less. The result is a constant pressure upon railroad companies to make their rates conform to those established by law in neighboring States.

Another influence has worked against the maintenance of reasonable rates, and especially upon our lines; namely, the failure of crops and consequent stagnation of business. Not only do we lose in the volume of traffic, but, the volume being greatly reduced, competing lines increase their efforts to secure what remains, and this leads to reductions by one which must be met by the others under penalty of surrendering the business. The result is light traffic, and little or no return. But, aside from competition, there is, in times of business depression, another influence which injuriously affects rates; namely, the difficulty of maintaining the price of transportation when the price of everything else has depreciated. This is a peculiar hardship; for, the volume of business having diminished, a railroad company can only save its revenue by adhering to its rates, and even then it must suffer to the extent of its loss of tonnage. But the people demand that the railroads shall share the general misfortune, and what the people demand they seldom fail to obtain. The Atchison Company has every reason to appreciate the fair and reasonable treatment it has received from the State of Kansas; but Kansas is no exception to the rule that hard times increase the difficulty of maintaining rates. For instance, in the fall of 1887, when the failure of crops was bearing heavily upon the people, the Railroad Commissioners addressed a letter to the Kansas Railroad Companies setting forth the existing distress, and that "similar emergencies in the past have been met in the spirit which we now invoke," and suggesting a temporary reduction of grain rates. This reduction was of course made; and the Companies having already lost in traffic lost also in the compensation they received for what was left, thus taking two shares instead of one of the common loss.

In the fall of 1888, similar conditions existed, the result of another failure of crops; and again the railroads were asked to meet the emergency by a reduction of rates. The Circular of the Railroad Commissioners so forcibly presents the conditions which confronted both the people and the railroads that we insert it in full.

OFFICE OF BOARD OF RAILROAD COMMISSIONERS OF STATE OF KANSAS.

CIRCULAR NO. 4.

TOPEKA, November 13, 1888.

To A. A. ROBINSON, ESQ., General Manager A. T. & S. F. R.R., Topeka, Kansas:

Dear Sir,—In a certain portion of Kansas, mainly that section lying west of the sixth principal meridian, the corn crop for the present year was a failure, owing chiefly to the prevalence of hot winds in July. The same condition prevailed the year previous, but with more destructive effect over a larger area. To meet this emergency last year, the Railroad Companies operating in this State put into effect a reduced grain tariff, which greatly ameliorated the unfavorable conditions then existing. In the region stricken the present year, the conditions are even worse than they were the year before. Large numbers of farmers in that part of the State will find it very difficult to procure necessary food for stock, which must be supported in order to conduct farming operations in the future. It is of the utmost importance that whatever aid and encouragment can be extended to the people suffering from these repeated disasters should be afforded promptly and generously.

The appeal addressed by us to the railroad managements in this State last year met with a ready and willing response, and this was duly appreciated by the people. The Board is in receipt of letters from farmers living in the western part of the State, in which it is represented to us that similar aid in reduced rates on feed grain would, the present year, be of very great benefit to that part of the State. That this would be the case is sufficiently suggested by the considerations above noted. What is needed is a system of very low rates upon which to move a sufficient amount of grain from the eastern to the western half of the State, to supply as cheaply as can be done the pressing necessities of the farmers of the latter region.

The Board feel it incumbent on them to suggest that a tariff of special grain rates, as low at least as those put into effect the 1st of October, 1887, be renewed to effect the object here indicated. We believe that such a policy will redound to the mutual benefit of the people and the railroads whose interests are inseparably linked with the future of this State, the prosperity of both being mutually dependent.

A copy of this letter is simultaneously addressed to each general manager whose lines penetrate the western half of the State.

Please acknowledge receipt of this letter, and advise the Board of your action thereon as early as convenient, and greatly oblige. Yours truly,

By the Board.

H. C. RIZER, *Secretary.*

At the time this circular was issued, the Companies to which it was addressed were suffering from the general prostration of business and enormous losses of revenue; but the reductions called for were made, and a grain schedule put into effect under the supervision of the Commissioners, which, while it no doubt tended to diminish the hardships of the general public, materially increased those of the railroads.

Again, in the matter of coal rates, we have recently had an illustration of the principle that, even omitting the question of competition, rates cannot be maintained in hard times. As an article of prime necessity to the people of a sparsely wooded country, coal has always been carried at a low and comparatively unprofitable rate. The past winter having been a warm and open one, the demand for coal has been small and the amount transported correspondingly light. It would seem, if business principles are considered, that under such circumstances the carrier should be permitted to maintain its rates. But the reverse has happened. The Railroad Commissioners, in obedience to the public demand and a legislative resolution, have called upon the railroads of the State to reduce their coal rates from ten to twenty per cent. We mention these facts not to complain of them, for to do so would be to complain of human nature. They are referred to as illustrations of the difficulty of maintaining rates in States or communities which are suffering from business depression. The people of Kansas are as fair and reasonable in their treatment of railroads as are those of any Western States, and the Board of Railroad Commissioners are exceptionally just and able. But all considerations yield to self-interest. Returning prosperity will no doubt materially diminish the demands made upon the railroads for lower rates.

You are aware that a large number of Western Railroad Companies have formed an association, with the approval of the Interstate Commerce Commission, for the purpose of preventing the unnecessary and destructive wars of rates which have been too common in the past. Your Company took an active interest in the organization of this association, and aided in securing the co-operation of the different Companies composing it. It is believed that the association will be beneficial both to the public and to the railroads.

OPERATING EXPENSES.

The expenses of operating averaged $319.40 less per average mile operated than in 1887, although the total expenses show an increase of $530,524.03, the excess being entirely due to the increased mileage, the average number of miles operated in 1888 being $397.77 in excess of that operated in 1887. The condition of the road, bridges, and buildings, as well as that of its rolling stock, has been fully maintained, and was never better than at present.

DIVIDENDS.

The unfavorable results from operating your road in the past year have caused more or less criticism of the action of your Directors in increasing the Dividend in the fall of 1887 to 7 per cent. In forming a just opinion of this matter, it is necessary to recall to the stockholders the statement made in Circular of July 30, 1887, which announced the intention of paying 7 per cent., commencing with November of that year. It was stated in the Circular referred to that for the "six months ending July 1, 1887, the Net Earnings exceeded by more than $1,200,000 the Net Earnings for the first six months of the year 1886,—that the earnings were still increasing, *and what has always been true in the past may be expected this year also; namely, that the revenue of the second six months of the year will be considerably in excess of that of the first six months.*" The prospect of very good crops and a large fall business at the time the Circular was issued was all that could be desired; and that the expectations were not unreasonable may be seen from the following figures, showing, first, the increase of Gross Earnings of the second half compared with the first half of the following years:—

	First Half.	*Second Half.*	*Increase.*
1884,	$7,646,815.40	$8,645,067.31	$998,251.91
1885,	7,227,256.46	8,344,138.93	1,116,882.47
1886,	6,941,367.72	9,042,939.47	2,101,571.75
1887,	9,091,634.98	9,369,731.28	278,096.30
1888,	7,174,571.47	8,438,341.78	1,263,770.31

and, second, the increase of Net Earnings for the second half of each year as compared with the first half:—

	First Half.	*Second Half.*	*Increase.*
1884,	$3,535,940.03	$4,201,343.89	$665,403.86
1885,	3,114,928.75	4,600,693.01	1,485,764.26
1886,	2,942,767.04	4,920,583.65	1,977,816.61
1887,	4,199,965.36	4,404,109.83	204,144.47
1888,	1,999,763.23	3,225,334.92	1,225,571.69

It will thus be seen that, through the partial failure of the corn crop, and through other causes which did not exist and which were not apparent at the time the Circular was issued, the year 1887 formed a remarkable exception to what had hitherto been the regular course of the Atchison Company's earnings, the second half of that year showing an increase over the first half of only $278,096.30 Gross and $204,144.47 Net. It should be observed that the usual relative conditions of Earnings again asserted itself in the year just past (1888), when the excess of Gross Earnings for the second half of the year over the first half was $1,263,770.31, and the excess of Net Earnings $1,225,571.69. Had there been no failure of the corn crop in 1887,—and all the indications pointed strongly in the other direction when the Circular was issued,—and had rates been maintained, the Company would have earned more than the full 7 per cent. for the entire year; and this increase would have been much greater, had there not been another season of light crops.

While the completion of the Chicago and other lines in 1888 warranted the anticipation of such an increase of the business and profits of the Atchison Company for that year as to place beyond reasonable doubt the ability of the Company to continue to pay 7 per cent., how all these expectations were unfulfilled has been already explained, and the causes were such as to be quite beyond the power of any Board of Directors to control.

The interruption of dividends grows out of causes which, in the opinion of your Directors, are not permanent. Under other and more favorable conditions, the Company was able to pay its shareholders dividends upon their investments for a period of ten consecutive years. Few railroads in the country can show a better record; and this record, as well as the less fortunate conditions of the present, should be fairly considered in any estimate of the value of the Atchison property or of its future earning capacity.

EXTENSIONS IN KANSAS AND INDIAN TERRITORY.

The history of Western railroad construction for the past quarter of a century has demonstrated that successful results can only be attained by occupying territory promptly, and often in advance of actual business necessity. This was the policy of the Atchison Company from the first. It led the way. It built, not upon assured returns of profit, but upon a faith which time has abundantly vindicated,—that the great Western and South-western regions of the country were rich in possibilities and that the company which first occupied the territory would reap the first and greatest rewards. Every stockholder of the Company, every investor who contributed his money to the enterprise, thereby expressed his confidence in this policy. That it was a wise one no one questions or can question. Did it cease to be wise when the Company completed its line through Kansas, or when it reached Pueblo, or when it pushed across the Raton and entered New Mexico? The final development of the road into a transcontinental system did not, in the opinion of your Directors, justify the Company in assuming that henceforward it had no duty to perform except to operate its completed line. We believed that the territory which was naturally tributary to the Atchison System should be preserved to that system; that the line which had been constructed at such great expense, and with such persistent zeal and energy, should not be left a single thread extending from the Missouri River to the Pacific Ocean, liable to be cut by rival lines and its business seized by its more enterprising neighbors. Adjacent to it were large tracts of country not inferior in soil, climate, or other natural advantages to that through which the main line extended. These regions had contributed some business to the Company; but as early as 1885 the increasing settlements and other changing conditions made it evident that by inaction the Company would not only lose such business as it had already secured therein, but lose the opportunity of securing it in the future. Other lines competitive to the Atchison were threatening to extend into this territory, attracted by the prospect of making it tributary to their own systems and at the same time detaching it permanently from ours. To occupy a portion of this territory seemed to your Directors then, as it does now, an obvious duty. It was hoped that prompt action on our part would deter other companies from building. It is true, this expectation has not been fully realized; but we submit without hesitation that the Atchison Company was bound to act upon the evidence before it to the same extent that individuals do in other business affairs. It is easy to assert that unnecessary, and therefore unwise, extensions have been made; but we remind such critics that not a mile has been built in the past four years that did not, at the time, have decidedly greater promise of profitable business than did the main line of the Atchison when its track was laid across the deserts of Western Kansas, Colorado, and New Mexico. There is no wisdom so common as that which comes after the fact. Drouths, failure of crops, excessive competition, continually decreasing rates, unwise legislation, strikes, and other calamities have befallen us, as they have other Western roads. But your Directors could not know in advance that any of these unfavorable conditions would have to be met — much less that they would *all* have to be met, at one and the same time. These misfortunes bear with equal severity upon main lines and branches,— upon the original Atchison System and upon the extensions, which have been the subject of unfriendly comment. Indeed, so far as the main Atchison System is concerned, its earnings have been increased by the extensions. True, they have not been increased enough to make 1888 a remunerative year, nor enough to counterbalance the loss sustained by the operation of the extensions. But it must not be forgotten that neither railroads nor extensions are built with a view solely to immediate earnings. If wisely planned, they look to the future, to the growth of States and communities, and to those settled conditions on the basis of which all business operations are conducted, and without which no business can prosper.

Every mile of our new roads has been built by the Company itself; and no construction company has been interposed to increase their cost, thus securing to our stockholders the actual value of every dollar which has been expended upon their property. Since their construction, repeated failure of crops has prevented these extensions from showing their real earning capacity. With fair conditions and the natural growth of the country, we do not doubt that they will prove valuable additions to our system, though this result will be retarded by the competition of other lines which have built into the territory which they occupy.

THE CHICAGO LINE.

In the report for the year 1886, the reasons were set forth which induced the Board to decide on building the Chicago Line; and it may not be out of place briefly to recapitulate them here.

Had the Missouri River continued to be the Western terminus of the lines by which we reached Chicago and the East, it is not probable that we should have ever considered it expedient to build east of the river; but, upon their extending westward into and through our territory, we were left with but one Eastern connection that was not a competitor also. The disadvantages of doing business under these conditions were too obvious to be overlooked, and the Board found it necessary to consider at once how best to meet the situation.

It was considered that a traffic agreement is always uncertain and unsatisfactory, wanting in that permanent character necessary to secure our interests and dependent upon the continuance of harmonious relations between roads whose interests might at any moment come into antagonism.

A traffic agreement being rejected, there remained only to consider the acquisition of a line between Kansas City and Chicago; and between construction and purchase there was no choice,— there was no line for sale, except at an exorbitant price.

The necessity for building a Chicago line to put us on an equality with our competitors being admitted, there remained the question whether such a line might not only be self-sustaining, but also a source of profit to the Atchison Company. This Company owns or operates over six thousand and five hundred miles of railroad, extending westward and south-westward from the Missouri River to Galveston, to Southern Colorado, to Mexico, and to California, all of which great extent of country has extensive and increasing business relations with Chicago and with the East *via* Chicago; and the greater part of the business to and from this mileage would naturally follow a continuous road, and thus yield a large traffic to the new line, independent of such business as it might secure from other connections. It seemed probable, also, that the new line would secure its fair proportion of the traffic between the cities of Chicago and Kansas City, which must increase with the growth of both cities, as well as a growing and remunerative local business to and from points on its line.

Upon careful consideration, your Directors reached the conclusion that the interests of the Atchison Company would be best served by building the line; and, after calling into consultation a number of the largest stockholders outside of the Board and finding that they concurred in these views, it was decided to proceed with the undertaking.

When the road was nearly completed, certain parties not connected with the Board, but largely interested in the securities of the new line, desiring to obtain an opinion as to its prospective value from an entirely unbiassed and disinterested source, engaged Mr. James C. Clarke to make a personal examination, and report upon the property. Mr. Clarke was formerly President of the Illinois Central Company, and thoroughly acquainted with the West and Western railroads; and, being in no way connected with or interested in the Atchison Company, it was justly considered that his judgment in relation to the property would be of great value. He was desired to report, not only upon the physical characteristics of the new road, but specially upon its ability to handle traffic at the lowest cost, upon its terminal facilities and conveniences for exchange of business with other lines, and, primarily, upon its value as a railroad property in itself, independent of its relations to the Atchison System. His examination and report was made in December, 1887; and his conclusions fully justify the action of the Directors in building the line. After stating that he finds the line thoroughly and carefully constructed,— with seventy-one pound steel rail, and its main bridges being of the latest improvement in iron, with first-class stone masonry; with admirably located and complete terminal facilities and conveniences for exchange of business with other lines; that its permanent nature, light grades and curvature, will enable it to be operated at small relative expense,—he says that, in his judgment, "the road should be self-sustaining from its own business in two years from its completion," and that "it ought, at no distant day, to yield as large a profit as any equal mileage of the Atchison line."

Although the line was opened for through business in May last, it was in such an unfinished condition that we could do comparatively little till July. As a new line must necessarily work under great disadvantage as against old lines with long established business, it was not to be expected that, during the few remaining months of the year, the road would do much more than earn the expenses of its operation; yet, in spite of the falling off of the business of the Atchison Road, the competition and rate-cutting between Chicago and Kansas City, the new line not only earned its expenses of operation, but contributed materially to the interest on its bonds.

The line is still a new and unfinished one, and will require considerable time and expenditure of money to bring its condition up to our standard of excellence; but, when that is reached, the road, from its advantages in distance, grades, and curvature, and cost of operation, cannot fail to prove a profitable one for our Company. Your Directors have as yet seen no reason to doubt the wisdom of building the line.

GULF, COLORADO AND SANTA FE RAILWAY.

Early in the year 1886, when the railroads of the country were in a prosperous condition, a proposition was made to the Board for the sale to our Company of the Gulf, Colorado and Santa Fé Railway of Texas.

This railway then extended from Galveston on the Gulf of Mexico northward to Fort Worth and Dallas, two of the most prosperous cities in the north of the State, with a number of branches projecting into the adjoining counties, making altogether about six hundred and seventy miles of railway completed and in operation. The section traversed by this line is the best of the State, having at the time of the purchase a population about the same as that of the same mileage of the Atchison Road in the eastern part of Kansas. The following statement shows the population of the counties of Texas through which the road passed, according to the census of 1880, the last published preceding the purchase: —

Galveston,	24,126
Brazoria,	9,780
Harris,	25,175
Fort Bend,	9,380
Washington,	27,584
Grimes,	18,606
Montgomery,	10,154
Burleson,	9,242
Milam,	18,659
Bell,	20,520
Lampasas,	5,421
McLennan,	26,933
Bosque,	11,217
Hill,	16,559
Johnson,	17,912
Dallas,	33,490
Tarrant,	24,678
Brown,	8,415
Coleman,	3,603
Denton,	18,145
Cooke,	20,391
Collin,	25,985
Hunt,	17,229
Lamar,	27,191

By way of comparison, the following table shows the population of the counties traversed by the Eastern three hundred and fifty miles of the main line of the Atchison Road, according to the same census: —

Atchison,	26,674
Jefferson,	15,564
Shawnee,	29,092
Osage,	19,643
Lyon,	17,327
Chase,	6,081
Marion,	12,457
Harvey,	11,454
Reno,	12,824
Rice,	9,292
Barton,	10,319
Pawnee,	5,396
Edwards,	2,409
Ford,	3,122

These were at the time the only figures accessible; but inasmuch as in 1886 the population of the cities of Galveston, Dallas, and Fort Worth was greater than that of the counties in which they were situated in 1880, and that for several years a large immigration had been constantly flowing into the States, the increase in Kansas and Texas was probably about the same.

At the time of the purchase, the line was in excellent condition; and, passing through such a country as it does, it seemed as if it must necessarily be self-supporting. The cities connected by it were large and growing, the country well cultivated, and, when connected with the Atchison System by extensions through Indian Territory, there would be instituted an exchange of products between Kansas and Texas that would be beneficial to both States as well as to the railroad connecting them. The connection would also open a line between Texas and Colorado; and the projected branch to connect with the St. Louis and San Francisco at Paris would give the State another line by which to reach St. Louis, Chicago, and the East.

While little local business was expected from the Indian Territory for the immediate present, confidence was felt that few years could pass before that part of the Territory already known as Oklahoma would be opened to settlement, and that then that part of the line would take care of itself.

But of more than any other value to the Company your Board considered the acquisition of a line to tide water; and, satisfied as they were that business between the Atlantic Coast and the Pacific must ultimately find a cheaper route than all rail, it seemed a matter of great importance to secure such a route. Even as early as at that time, 70 per cent. of the entire shipments to the Pacific Coast from that part of the country east of Buffalo and Pittsburg were taken *via* water to New Orleans, and thence by rail; and, since that time, the proportion has increased to 90 per cent. Of course, the view in relation to the use of a water route looked to a new and independent steamship line between New York and Galveston, owned or operated in our interest, by which we should have a line of our own from the Atlantic Coast to the Pacific, placing us on an independent basis for transcontinental business like that of the Southern Pacific. So far we have not been able to realize this part of the plan; but, if we should carry it out, the results would demonstrate its value.

OKLAHOMA.

Although occurring since the close of the year, it may not be improper to refer to the recent opening to settlement of that portion of Indian Territory known as Oklahoma. While the Territory covered by legislation included about six million acres, the President's proclamation only opened about one-third of it to settlers. The immigration will be so great as to cover this section very speedily, and action is already being taken to purchase the Indian title by the Government to the remainder, and open that also.

There is every reason to believe that the earnings of the Atchison line will be largely increased by the settlement of this region, as the line passes North and South through its entire length, and is the only railroad by which the country is directly reached.

LAND DEPARTMENT.

SONORA AND OTHER AUXILIARY RAILROADS.

Statements of the operations of these properties for the year 1888 will be found following this report.

CAPITAL STOCK ACCOUNT.

At the close of 1888, the Capital Stock, including the Scrip outstanding, amounted to	$75,000,000.00

BOND ACCOUNTS.

The Bonded Debt of the Atchison Co. on Dec. 31, 1887, was . .		$37,695,000.00
There were issued in 1888: —		
A., T. & S. F. R.R. Co. Six per cent. Sinking Fund Secured Bonds, ...		2,152,000.00
A., T. & S. F. R.R Co. Collateral Trust Five per cent. Bonds, account of construction of California Central and Denver & Santa Fé roads, ...		8,201,000.00
		$48,048,000.00
Redeemed in 1888: —		
A., T. & S. F. Five per cent. Bonds, ...	$34,000.00	
A., T. & S. F. Sinking Fund Five per cent. Bonds,	37,000.00	
A., T. & S. F. Four and a half per cent. Sinking Fund Bonds.	78,000.00	
A., T. & S. F. Six per cent. Sinking Fund Secured Bonds, ...	145,000.00	294,00.000
Outstanding, Dec. 31, 1888, ...		$47,754,000.00

CANCELLED BOND ACCOUNTS.

These accounts on December 31, 1888, included the following Bonds: —

A., T. & S. F. Five per cent. Bonds, ...	$245,000.00
" " Sinking Fund Five per cent. Bonds, ...	299,000.00
" " Four and a half per cent Sinking Fund Bonds, . .	618,000.00
" " Six per cent. Sinking Fund Secured Bonds, . . .	723,000.00
" " Land Grant Mortgage Bonds, ...	704,000.00
" " Land Income Bonds, ...	480,000.00
	$3,069,000.00

SURPLUS ACCOUNTS DEC. 31, 1888.

Income Accounts,	$6,435,551.15
Special Surplus Accounts,	4,631,905.34
Total,	$11,067,456.49

Which is represented by the following: —

Permanent Investment in Construction and Equipment of Property in excess of Bonds outstanding,	$661,967.50	
Excess value of Equipment Leases over obligations therefor outstanding,	67,686.27	$729,653.77
* Available Investments, Bonds and Stocks in Treasury, Par $6,539,946.62., Cost,		4,000,936.71
Material and Fuel on hand,		1,424 756.21
Sundry Accounts, including Advances to Auxiliaries,		4,912,109.80
Total,		$11,067,456.49

*Does not include Securities held Unpledged by Investment Properties owned by Atchison Company; Par $7,764,775.76, Cost $5,887,977.52.

CONSTRUCTION EXPENDITURES.

CONSTRUCTION AND EQUIPMENT EXPENDITURES CHARGED TO A., T. & S. F. & SOUTHERN KANSAS CONSTRUCTION ACCOUNTS.

For new Stone Culverts and Improvement of Line,		$2,903.43
For new Side Tracks,		128,398.51
For new Fences,		11,356.16
For new Bridges,		20,565.57
For new Buildings,		154,948.91
For new Tools and Machinery,		80,884.23
For Real Estate,		1,353.26
For Miscellaneous,		987.16
		$401,397.23
For new Locomotives,	$1,120,284.21	
For new Cars,	2,571,113.92	3,691,398.13
		$4,092,795.36

Expenditures during the year for Real Estate and Permanent Improvements on existing roads charged to account of Auxiliary Companies: —

Florence, Eldorado & Walnut Valley Railroad,		$2,526.55
Kansas City, Emporia & Southern Railway,		882.81
Kansas City, Topeka & Western Railroad,	*Cr.*	4,694.53
Leavenworth, Topeka & South-western Railway,	*Cr.*	721.34
Marion & McPherson Railway,		3,934.19
New Mexican Railroad,		18,420.24
New Mexico & Arizona Railroad,	*Cr.*	2,404.67
New Mexico & Southern Pacific Railroad,		23,391.79
Pueblo & Arkansas Valley Railroad,		105,855.74
Rio Grande & El Paso Railroad,		2,790.62
Rio Grande, Mexico & Pacific Railroad,		13,907.22
Silver City, Deming & Pacific Railroad,	*Cr.*	2,022.32
The Southern Kansas R'w'y (H. & W. and Kan. So. Divs.),		10,880 48
The Southern Kansas R'w'y (Kan. City & Emp. Div.),		44,868.07
The Southern Kansas R'w'y (Kan. City & Olathe),		3,759.25
Wichita & South-western Railway,		41,253.20
		$262,627.30

Expenditures during the year for Real Estate and Construction of new roads: —

*Atchison, Topeka & Santa Fé R.R. in Chicago,		$2,144,217.36
*Chicago, Kansas & Western Lines,		1,261,776.68
*Chicago, Santa Fé & California Railway,	$5,255,299.52	
Mississippi River Bridge (at Ft. Madison),	72,943.77	
Missouri River Bridge (at Sibley).	206,262.49	5,534,505.78
California Central Railway,		1,914,544.28
Denver & Santa Fé Railway,		487,204.72
Florence, Eldorado & Walnut Valley Railroad, Winfield Extension,		6,494.44
Kansas City, Emporia & Southern Railway, Howard Extension,		2,949.25
Leavenworth, Northern & Southern Railway,		208,844.01
Pueblo & Arkansas Valley Railroad, Clelland Extension,		67,036.07
St. Joseph, St. Louis & Santa Fé Railway,		160,759.61
St. Louis, Kansas City & Colorado Railroad,		46,954.68
Southern Kansas & Panhandle Railroad,		87,786.10
The Southern Kansas Railway, Frontenac Extension,		29,931.67
The Southern Kansas Railway, Girard Extension,		112.19
The Southern Kansas Raliway, Indian Territory Extensions,		204,320.16
The Southern Kansas Railway, Medicine Lodge Extension,		19,326.88
The Southern Kansas Railway of Texas,		121,289.03
		$12,298,052.91

Other expenditures: —

Cañon City Coal Company,	$180,000.00	
Kansas City Belt Railway,	128,710.79	
Las Vegas Hot Springs Hotel and Bathhouses,	36,831.78	$345,542.57

SUMMARY.

Expenditures for Additions and Improvements to Atchison & Southern Kansas Roads,	$4,092,795.36
Expended for Real Estate and Permanent Improvements charged to account of Auxiliary Companies,	262,627.30
Expenditures during the year for Real Estate and Construction of new roads,	12,298,052.91
Other expenditures,	345,542.57
Total,	$16,999,018.14

---

* The cost of these roads has been provided for wholly or in part by the issue of their own bonds, which are not direct obligations of the Atchison, Topeka & Santa Fe Railroad.

NEW CONSTRUCTION.

New Construction during 1888 included only such as was required to complete work under way at the beginning of the year, and is distributed as follows: —

Chicago, Kansas & Western Railway:			
Concordia to State Line,	37.6		
State Line to Superior (leased from the Chicago & Northwestern Railway),	2.53	40.13	miles.
Gulf, Colorado & Santa Fe Railway:			
Completion of Lampasas Branch to San Angelo,		35.84	"
California Central Railway:			
Completion of lines,		84.49	"
Atchison, Topeka & Santa Fe R.R. in Chicago:			
Terminal Company's tracks in Chicago,		2.52	"
St. Joseph, St. Louis & Santa Fe Railway,		1.50	"
Total,		164.48	"

By order of the Board,

WILLIAM B. STRONG, *President.*

Atchison, Topeka and Santa Fé Railroad Company.

Boston, April 15, 1889.

To the President and Directors of the Atchison, Topeka & Santa Fé Railroad Company:

Gentlemen,— The following Statements relating to the financial and business operations of the Atchison, Topeka & Santa Fé Railroad Company, and of its Auxiliary or Investment properties, for the Fiscal Year ended Dec. 31, 1888, are respectfully submitted.

Joseph W. Reinhart,
General Auditor.
John P. Whitehead,
Comptroller.

Index to the Statements contained herein:

ATCHISON, TOPEKA & SANTA FE RAILROAD CO'S SYSTEM—PROPER.

PAGE
General Account, A. T. & S. F. R.R. Company, December 31, 1888, . 36-39
A. Construction and Equipment Detail, ... 40
A.A. Capital Stock, ... 41
Bonds, Funded Debt, ... 41
Guarantee Fund Notes, ... 41
B—1. Permanent Investments, ... 42
Property in Leased and Auxiliary Roads represented by Capital Stocks owned, ... 42
Memorandum of Securities owned by Companies controlled by A., T. & S. F. R.R. Co., ... 43
B—2. Property in Leased and Auxiliary Roads represented by Bonds deposited as Collateral for A., T. & S. F. R.R. Co. Bonds issued, ... 44-45
B—2. Securities in hands of Sundry Trustees as Collateral, ... 44-46
B—2. Other Trustee Accounts, ... 46
C. Other Investments, ... 47
D. Equipment Leases, ... 48
E. Sundry Subscriptions, ... 49
F. Sundry Advances for Surveys, etc., ... 50
G. Trustees' Land Grant, ... 51
H. Suspended Accounts, ... 52
I. Material and Fuel in Stock, ... 53
J. Equipment Lease Warrants, ... 54
K. Due from Auxiliary Companies, ... 55-57
K.K. Due to Auxiliary Companies, ... 58
L. Due from Auxiliary Companies in Current Operating and Traffic Accounts, 60
L.L. Due to Auxiliary Companies in Current Operating and Traffic Accounts . 62
L. Accounts Receivable, ... 59-60
L.L. Accounts Payable, ... 61-62
M. Bills Receivable, ... 63
N. Bills Payable, ... 63
O. Cash and Sundry Deposits, ... 64
O. Guarantee Fund Notes, ... 64
O.O. Bond Interest Coupons Due and Past Due, ... 65
O.O. Dividends Past Due not Claimed, ... 65
O.O. Scrip Certificates, ... 65
P. Interest on Bonds and Rentals, Accrued, ... 66

PAGE
P. Taxes, Accrued, ... 66
P. Sinking Fund Requirements, Accrued, ... 66
Q. General Income and Surplus, ... 67–69
Q — 1. Receipts from Other Sources, ... 70–71
Q — 2. Memorandum of Direct Fixed Charges, ... 72
Q — 3. Sundry Profit and Loss Items, ... 73
Q — 4. Special Construction Surplus Accounts, ... 74

The following are " General Accounts " of Railroad Companies which are leased and controlled by Atchison, Topeka & Santa Fe Railroad Company. Their Property and Capital accounts appear here following, but their Operations are included in the General Account of the Atchison Company hereinbefore stated:—

Kansas City, Topeka & Western R.R. Co., ... 75
Leavenworth, Northern & Southern Railway Co., ... 76
Kansas City, Emporia & Southern Railway Co., ... 77
Florence, Eldorado & Walnut Valley R.R. Co., ... 78
Marion & McPherson Railway Co., ... 79
Wichita & South-western Railway Co., ... 80
The Pueblo & Arkansas Valley R.R. Co., ... 81
The Denver & Santa Fé Railway Co., ... 82
The New Mexico & Southern Pacific R.R. Co., ... 83
The Rio Grande, Mexico & Pacific R.R. Co., ... 84
Silver City, Deming & Pacific R.R. Co., ... 85
Rio Grande & El Paso R.R. Co., ... 86
The New Mexican R.R. Co., ... 87
The Southern Kansas Railway Company, ... 88–89
The Southern Kansas Railway Co. of Texas, ... 90

Analysis of General Surplus Account of Dec. 31, 1888, ... 91
Report of Land Department, ... 92–94
Statement showing details of Locomotive Repairs and Performance per mile, ... 95
Statement of Rolling Stock Equipment, ... 96
Statement of Gross Earnings, Operating Expenses, and Net Earnings by Months, ... 97–98
Comparative Statement of Earnings, Expenses, and Net Earnings 1888 with 1887, ... 99

Summary of Mileage of the Atchison, Topeka & Santa Fé Railroad Company's System — Proper, embraced in all the foregoing Accounts, . . 100

Accounts of AUXILIARY RAILROAD COMPANIES which are kept Separate and Distinct from Atchison, Topeka & Santa Fe R.R. Co.'s System—Proper, as to all Transactions both General and Operating:—

ROADS LEASED AND OWNED.

PAGE

Sonora Railway Co., Limited (*owned by Atchison Co.*):

General Account, ... 102–103
Income Account, ... 104

New Mexico & Arizona R.R. Co. (*owned by Atchison Co.*):

General Account, ... 105
Income Account, ... 106

Chicago, Santa Fé & California Ry. Co. (*leased and owned by Atchison Co.*):

General Account, ... 108–109
Income Account, ... 110

Atchison, Topeka & Santa Fé R.R. Co., in Chicago (*leased to C., S. F. & C. Ry. Co.*):

General Account, ... 111

Mississippi River R.R. & Toll Bridge Co. (*leased to C., S. F. & C. Ry. Co.*):

General Account, ... 112

The Sibley Bridge Co. (*leased to C., S. F. & C. Ry. Co.*):

General Account, ... 113

St. Joseph, St. Louis & Santa Fé Ry. Co. (*owned by Atchison Co.*):

General Account, ... 114
Income Account, ... 115

St. Louis, Kansas City & Colorado R.R. Co. (*owned by Atchison Co.*):

General Account, ... 116
Income Account, ... 117

Gulf, Colorado & Santa Fé Ry. Co. (*owned by Atchison Co.*):

General Account, ... 118–119
Income Account, ... 120

PAGE

California Central Railway Company (*owned by Atchison Co.*):

General Account, ... 122–123
Income Account, ... 124

California Central Railway — Construction (*Atchison Company*):

General Account, ... 125

ROADS CONTROLLED.

* **The Chicago, Kansas & Western R.R. Co.** (*Atchison Co. owns* $\frac{47363}{64223}$):

General Account, ... 126
Income Account, ... 127

* **California Southern R.R. Co.** (*Atchison Company owns* $\frac{3046}{6072}$):

General Account, ... 128–129
Income Account, ... 130

ROADS OWNED JOINTLY WITH OTHER RAILROAD COMPANIES.

With Union Pacific Ry. Co.,—

‡ **Leavenworth, Topeka & South-western Ry. Co.** (*Atchison Co. owns* $\frac{5509}{13800}$):

General Account, ... 131
Income Account, ... 131

‡ **Manhattan, Alma & Burlingame Ry. Co.** (*Atchison Co. owns* $\frac{4186\frac{1}{2}}{10000}$):

General Account, ... 132
Income Account, ... 132

With St. Louis & San Francisco Ry. Co.,—

‡ **The Wichita & Western R.R. Co.** (*Atchison Co. owns* ½):

General Account, ... 133
Income Account, ... 133

‡ **The Kingman, Pratt & Western R.R. Co** (*Atchison Co. owns* $\frac{190}{585}$):

General Account, ... 134
Income Account, ... 134

* In this Accounting, Results entire are treated as those of Atchison Company.
‡ In this Accounting, one-half the Results treated as those of Atchison Company.

PAGE

***Atlantic & Pacific R.R. Co.** (*Atchison Co. owns* $\frac{291519\frac{1}{2}}{797603}$):

General Account, ... 136–137
Income Account, ... 138

With Chicago, Milwaukee & St. Paul Ry. Co. and K. City, F. S. & M. R.R. Co.,—

The Kansas City Belt Ry. Co. (*Atchison Co., through K. City, Topeka & W. R.R Co., owns* ½):

General Account, ... 139
Income Account, ... 139

OTHER PROPERTIES WHOLLY AND PARTLY OWNED.

The Las Vegas Hot Springs Co. (*owned by New Mex. & S. Pac. R.R. Co.,—Atchison Co.*):

General Account, ... 140
Income Account, ... 140

The Canon City Coal Co. (*owned by Pueblo & Ark. Valley R.R. Co.,—Atchison Co.*):

General Account, ... 141
Income Account, ... 141

The Trinidad Coal & Coking Company (*owned by Pueblo & Ark. Valley R.R. Co.,—Atchison Co.*):

General Account, ... 142
Income Account, ... 142

Cherokee & Pittsburgh Coal & Mining Co. (*owned by The So. Kansas Ry. Co.,—Atchison Co.*):

General Account, ... 143
Income Account, ... 143

The Osage Carbon Company (*owned by Atchison Co.*):

General Account, ... 144
Income Account, ... 144

The San Pedro Coal & Coke Co. (*owned by Atchison Co.*):

General Account, ... 145
Income Account, ... 145

Raton Coal & Coke Co. (½ *owned by Atchison Co.*):

General Account, ... 146
Income Account, ... 146

---

*The Atchison Company owns $\frac{291519\frac{1}{2}}{797603}$ of the A. & P. R.R. Co., and the St. L. & S. F. Ry. Co. a like proportion; the remainder being owned by outside holders. As the Interest on Bonds is guaranteed one-half each by Atchison and St. L. & S. F. Ry. Cos. respectively, this accounting treats the Division of Results upon the same basis.

PAGE

Scandinavian Coal & Mining Co. (½ *owned by Atchison Co.*):
- General Account, ... 147
- Income Account, ... 147

Arkansas Valley Elevator Co. (*owned by Atchison Co.*):
- General Account, ... 148
- Income Account, ... 148

The Atchison City Elevator Co. ($\frac{231}{500}$ *owned by Atchison Co.*):
- General Account, ... 149
- Income Account, ... 149

Statement of Rolling Stock Equipment of the Auxiliary Companies, Atchison, Topeka & Santa Fe Railroad Company, ... 150

Condensed Statement of Operations of the Auxiliary or Investment Properties of the Atchison, Topeka & Santa Fe Railroad Company for Fiscal Year ended Dec. 31, 1888, ... 151–152

General Summary of Operated Mileage of all the Railroad Properties as of Dec. 31, 1888, ... 153

Summary of the General Income Accounts of the Atchison Company and of its Auxiliary or Investment Properties, for the Fiscal Year ended December 31, 1888, ... 154–157

General Statement of Material and Fuel in Stock of the various Companies as of Dec. 31, 1888, ... 158

General Statement of Gross and Net Floating Debt of the Atchison, Topeka & Santa Fe Railroad Company and of its Auxiliary or Investment Properties as of Dec. 31, 1888, ... 159–161

General Statement showing Average and Actual Mileage and Net Earnings of the Atchison, Topeka & Santa Fe Railroad Company's System — Proper, and of its Auxiliary or Investment Railroad Properties for the years 1887 and 1888, ... 162

Memorandum of Bond Issues and of Fixed Charges of the Railroad Properties, Direct, Indirect, and Contingent for the year 1889, ... 163–167

Atchison, Topeka & Santa Fé Railroad Company and System—Proper.

GENERAL ACCOUNT

RESOURCES.

See Statemnt for Detail					
	CAPITAL.				
A	Construction and Equipment Dec. 31, 1887,		$42,855,654.82		
	Additions during Year 1888:				
	Construction,	$178,241.28			
	Equipment,	3,738,299.42	3,916,540.70	$46,772,195.52	
B–1.	Permanent Investments: Property in Leased and Auxiliary Roads represented by Capital Stocks owned,		38,974,258.05		
B–2.	Property in Leased and Auxiliary Roads represented by Bonds deposited as Collateral for A., T. & S. F. R.R. Co. Bonds,		37,853,000.00		
			76,827,258.05		
	Less Securities in hands of Trustees, as Collateral:				
	Bonds,	37,853,000.00			
	Stocks: Atchison in Chicago, Par, $4,998,000.00 Chicago, S. F. & Cal. R'y Co., 14,998,000.00 Total Par, $19,996,000.00 At Nominal,	$2.00	37,853,002.00	38,974,256.05	
B–2.	Sundry Trustees: Collateral with them,		40,414,394.50		
	Other deposits,		55,121.43	40,469,515.93	$126,215,967.5
C.	Other Investments: Bonds and Stocks of Leased, Auxiliary, and other Properties owned by Company and not included in foregoing; at cost,			4,000,936.71	
D.	Equipment Leases: Rolling stock being acquired under deferred payments as rental; when paid for to be carried to Equipment Account,			1,370,348.27	5,371,284.9
	DEFERRED.				
F.	Sundry Advances for Surveys New Lines, Real Estate, etc., etc., to be ultimately, when adjusted, charged to Cost of Property or to Auxiliary Companies,			124,428.36	
H.	Suspended Accounts not yet adjusted for application,			136,883.60	
I.	Material and Fuel in Stock,			1,424,756.21	1,686,068.1
	AUXILIARY COMPANIES.				
K.	Due from Sundry Leased, Controlled, and Auxiliary Roads and Companies in Construction and General Account,		13,555,678.19		
L.	Due from Auxiliaries in Current Traffic and Operating Accounts,		1,008,544.86		14,564,223.0
	Amount carried forward,				$147,837,543.7

E RAILROAD COMPANY.

ECEMBER 31, 1888.

LIABILITIES.

CAPITAL.

See temnt for etail.				
.A.	Capital Stock, ...		$75,000,000.00	
.A.	Bonds,—Funded Debt, ...	$47,754,000.00		
.A.	Guarantee Fund Notes issued, . .	2,800,000.00	50,554,000.00	$125,554,000.00
.A.	Guarantee Fund Notes,—Balance not yet called and not yet issued, . .			4,200,000.00
E.	Sundry Subscriptions: Miscellaneous (Net), ...			4,585.00
G.	Land Department Receipts: Not yet carried to Surplus, ...			1,988,394.55

DEFERRED.

G.	Trustees' Land Grant: Secured Notes, ...		2,330,791.09	
J.	Equipment Lease Warrants: Not due until Dec., 1889, to June, 1891,		1.302,662.00	3,633,453.09

AUXILIARY COMPANIES.

.K.	Due to Sundry Leased, Controlled, and Auxiliary Roads and Companies in Construction and General Account, .	304,226.82		
.L.	In Current Traffic and Operating Accounts, ...	489,284.00		793,510.82
	Amount carried forward, ...			$136,173,943.46

GENERAL ACCOUN

See Statemnt for Detail.				
	Amount brought forward, ...			$147,837,543.
	CURRENT.			
L.	ACCOUNTS RECEIVABLE:* Due from Agents, Companies, Individuals, and U. S. Government in Current Operating and Traffic Account, ...		1,862,292.23	
M.	BILLS RECEIVABLE:			
	Boston, ...			
	Topeka, ...	$2,129.59	2,129.59	
O.	CASH: ′ Deposits for Coupons, ...	580,157.00		
	Deposits for Dividends, ...	23,371.25	603,528.25	
	Treasurer, Topeka, ...	151,905.80		
	Assistant Treasurer, Boston, . . .	660,059.99	811,965.79	
			3,279,915.86	
O.	GUARANTEE FUND NOTES:			
	In Treasury, subscribed for, but not yet called, ...		4,200,000.00	7,479,915.
	INCOME AND SURPLUS.			
				$155,317,459.

For full Detail see Statements following, referred to by designating letters.

Mileage, Main Stem — A., T. & S. F. R.R., Dec. 31, 1887,	. . .	470.58
" " " " " Dec. 31, 1888,	. . .	470.58

E RAILROAD COMPANY.

ECEMBER 31, 1888. *(Continued.)*

See atemnt for etail.	*Amount brought forward,*			$136,173,943.46
	CURRENT.			
L L.	ACCOUNTS PAYABLE:* Due to Companies, Individuals, etc., in Current Operating and Traffic Account, . .		1,948,614.22	
N.	BILLS PAYABLE, ...			
	Boston, ...	3,255,569.62		
	Topeka, ...	1,349,591.81	4,605,161.43†	
.O.	BOND INTEREST COUPONS: Due Jan. 1, 1889, ...	510,310.00		
	Past due, not presented, ...	72,742.00	583,052.00	
.O.	DIVIDENDS PAST DUE: Not yet claimed,		23,699.75	
O.O.	SCRIP CERTIFICATES: Issued, not yet presented, ...		195.00	
P.	INTEREST ON BONDS AND RENTALS, ACCRUED: To Dec. 31, 1888, but not due until from February to June, 1889, .	899,604.57		
P.	TAXES ACCRUED: Balance for twelve months to Dec. 31, 1888, payable, ...	14,672.64		
P.	SINKING FUND REQUIREMENTS: Accrued, but not due, ...	1,060.00	915,337.21	8,076,059.61
	INCOME AND SURPLUS.			
Q.	SURPLUS: Credit per Ledger Dec. 31, 1887, ...	7,888,620.77		
	Add Sundry Items applicable to that period, ...	64,817.34		
	Total Surplus to Dec. 31, 1887, . . .	7,953,438.11		
	Deduct Deficiency—after charge for Dividends, for Year ending Dec. 31, 1888, ...	1,517,886.96		
	GENERAL INCOME: SURPLUS, DEC. 31, 1888, ...		6,435,551.15	
	SURPLUS ACCOUNTS: For Specific Purposes, Dec. 31, 1888, ...		4,631,905.34	11,067,456.49
				$155,317,459.56

(*Not including Auxiliaries.)

† $2,424,238.62 of this paid to March 31, 1889.

A. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (CAPITAL ACCOUNTS).

CONSTRUCTION AND EQUIPMENT.

To Dec. 31, 1887:		
Track, Bridges, Buildings, etc.,	$28,803,713.71	
Machinery, Tools, Work Cars, etc.,	770,560.76	
Freight and Passenger Cars,	8,272,368.52	
Locomotives,	5,009,011.83	
		$42,855,654.82
Year ending Dec. 31, 1888:		
Track, Bridges, Buildings, etc.,	107,747.43	
Machinery, etc.,	65,245.70	
Miscellaneous,	5,248.15	
Freight and Passenger Cars,	2,618,015.21	
Locomotives,	1,120,284.21	
		3,916,540.70
Aggregate Construction and Equipment,		**$46,772,195.52**

Summary, Dec. 31, 1888.

Property:		
Fixed Plant,	$29,752,515.75	
Rolling Stock: Locomotives and Cars,	17,019,679.77	
Aggregate,		**$46,772,195.52**

A.A. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES (CAPITAL ACCOUNTS).

CAPITAL STOCK.

749,925 shares at $100,	$74,992,500.00	
Less Capital Stock in Treasury (for Stock Scrip), 37 shares,	3,700.00	
		$74,988,800.00
Capital Stock in escrow, 75 shares,		7,500.00
Frac. Stock Certificates (2), exch'ngeable for Stock,		100.00
Capital Stock Scrip (Cir. 60),		3,600.00
Total,		**$75,000,000.00**

BONDS.—(A., T. & S. F. ISSUES ONLY.)

First Mortgage Bonds 7%,	$7,041,000.00	
*Land Grant Mtg. " "	2,411,500.00	
Consolidated Mtg. " "	108,500.00	
Five per cent. Bonds,	940,000.00	
Sinking Fund 5% Bonds,	3,444,000.00	
4½% Sinking Fund Bonds,	4,017,000.00	
" Registered Certificates,	515,000.00	
6% S. F. Secured Bonds, 1st issue,	4,867,000.00	
" Registered " 1st issue,	65,000.00	
" S. F. Secured " 2d issue,	8,820,000.00	
" Registered " 2d issue,	525,000 00	
Collateral Trust 5% Bond Scrip,	4,400.00	
" " " " $1,000,	14,622,000.00	
" " " " B $500,	165,500.00	
" " " " A $100,	83,100.00	
" " " Reg. Certifs.,	125,000.00	
Total,		**$47,754,000.00**

GUARANTEE FUND NOTES.

6%, 3 years from Nov. 1, 1888, Secured:		
Authorized Issue,	$10,000,000.00	
Now being issued under Subscription,	7,000,000.00	
Issued as called to December 31,		**$2,800,000.00**
In Treasury, not yet called and not yet issued,		**4,200,000.00**

---

* Since retired in January, $100,000.00.

B.—1. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (CAPITAL).

PERMANENT INVESTMENTS.

Property in Leased and Auxiliary Roads represented by Capital Stock owned.

	SHARES.	PAR VALUE.	LEDGER COST.
* A. & P. R.R. Co.,	291,519½	$29,151,950.00	$2.00
A., T. & S. F. R.R. Co. in Chicago,	50,000	5,000,000.00	2.00
Cal. Cent. R'y Co.,	64,570	6,457,000.00	1.00
Cal. Southern R.R. Co.,	30,460	3,046,000.00	3,813.50
Chic., Kansas & West. R.R. Co,	47,363	4,736,300.00	201.00
Chic., S. F. & Calif. R'y Co.,	150,000	15,000,000.00	2.00
Denver & Santa Fé R'y Co.,	15,000	1,500,000.00	1.00
F., E. & W. V. R'y Co.,	7,200	720,000.00	720,000.00
† Gulf, Col. & S. F. R'y Co.,	45,500	†4,550,000.00	7,982,500.00
Kan. Cy., Emp. & So. R'y Co.,	5,957	595,700.00	595,201.00
Kan. Cy., Top. & Westn. R.R. Co.,	35,000	3,500,000.00	3,500,000.00
Leav., No. & So. R'y Co.,	6,416	641,600.00	1.00
Leav., Top. & So. West. R'y Co.,	5,509	550,900.00	69,611.91
Man., Alma & Bur. R'y Co.,	4,186½	418,650.00	418,650.00
Marion & McPherson R'y Co.,	13,463	1,346,300.00	1,203,101 00
New Mex. & Ariz. R.R. Co.,	36,820	3,682,000.00	1.00
New Mex. & So. Pac. R.R. Co.,	93,020	9,302,000.00	7,090,001.00
New Mexican R.R. Co.,	14,558	1,455,800.00	1.00
Pueblo & Ark. Val. R.R. Co.,	56,162	5,616,200.00	5,616,200.00
Rio G., Mex. & Pac. R.R. Co.,	69,380	6,938,000.00	6,938,000.00
Rio Grande & El Paso R.R. Co.,	2,000	200,000.00	200,000.00
Sil. Cy., Dem. & Pac. R.R. Co.,	7,080	708,000.00	140,063.64
So. Kan. & Pan Handle R.R. Co.,	3,009	300,900.00	1.00
St. Jos., St. L. & S. F. R'y Co.,	9,700	970,000.00	48,500.00
St. Louis, K. C. & Col. R.R. Co.,	16,000	1,600,000.00	1.00
Sonora R'y Co., Ltd.,	52,480	5,248,000.00	2,624,000.00
The So. Kansas R'y Co.,	13,164	1,316,400.00	1.00
Wichita & So. Westn. R'y Co.,	18,244	1,824,400.00	1,824,400.00
Wichita & Western R.R. Co.	2,250	225,000.00	1.00
Totals,		$116,601,100.00	$38,974,258.05
Less Boston Safe Deposit and Trust Co., deposited with them as Collateral for Guarantee Fund Notes:			
A., T. & S. F. R.R. Co., in Chicago, 49,980 shs. cap. stock,	$4,998,000		
C., S. F. & C. R'y Co., 149,980 shs. cap. stock,	14,998,000	19,996,000.00	2.00
Totals, { Par value,		$96,605,100.00	
Totals, { Ledger cost,			**$38,974,256.05**

Note.—The Statement annexed shows Stocks and Securities held by Investment Properties owned by A., T. & S. F. R.R. Co.

* See also Statement C.

† The Atchison Company is entitled to 35,500 Shares Gulf, Colorado & Santa Fé Ry. Company Stock additional to the above, when issued.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

SECURITIES HELD BY INVESTMENT PROPERTIES OWNED BY A., T. & S. F. R.R. CO.

NAMES OF SECURITIES.	PAR VALUE.	COST.	OWNED BY.
Atchison Union Depot Stock, 9 Shares, ...	$9,000.00	$10,336.95	St.J.,St.L. & S.F Ry. Co.
Beach Hotel & S. S. Improvement Co. Bonds, ...	10,000.00	10,000.00	G., C. & S. F. Ry. Co.
Bodine Coal Co. Stock, 170 Shares, ...	17,000.00	17,000.00	G., C. & S. F. Ry. Co.
California So. R.R. Co. Stock, 8 Shares, ...	800.00	160.00	Cal. So. R.R. Co.
Canon City Coal Co. Stock, 8,500 Shares (Par $50), .	425,000.00	464,125.00	P. & A. V. R.R. Co.
Cher. & Pitts. C. & M. Co. Stock, 2,000 Shares, . .	200,000.00	200,000.00	The So. Kan. Ry. Co.
Hunnewell Town Co. Stock, 250 Shares, ...	25,000.00	1.00	The So. Kan. Ry. Co.
The Kan. Cy. Belt Ry. Co. Stock, 500 Shares, . . .	50,000.00	50,000.00	K. C., T. & W. R.R. Co.
Kan. Cy. Union Depot Co. Stock, 210 Shares, . . .	21,000.00	33,629.23	The So. Kan. Ry. Co.
Kingman, Pratt & Western R.R. Stock, 3,800 Shares, owned by W. & W. R.R. Co.—Atchison Co.'s Proportion ½, or say 1,900 Shares,	190,000.00	1.00	Wich. & West. R.R. Co.
Las Vegas Hot Springs Co. Stock, 2,466 Shares, . . .	†246,600.00	184,950.00	N. M. & S. P. R.R. Co.
Leav. Union Depot Co. Stock, 1-7 of $150,000 (say), . .	21,428.58	28,152.03	L., T. & S. W. Ry. Co.
Marine Ry. & D. Dock Co. Stock, 100 Shares, . . .	10,000.00	10,000.00	Cal. Cent. Ry. Co.
Miss. Riv. R.R. & T. B. Co. Stock, 10,000 Shares, . .	1,000,000.00	1.00	C., S. F. & C. Ry. Co.
Bonds, . .	650,000.00*	650,000.00	C., S. F. & C. Ry. Co.
Precipice Can. Water Co. Stock, 15 Shares, ...	1,500.00	898.13	Cal. Cent. Ry. Co.
St. Jos. Terminal & R.R. Co. Stock, 1,250 Shares, . . .	125,000.00	125,000.00	St.J.,St.L. & S.F.Ry. Co.
The Sibley Bridge Co. Stock, 4,500 Shares, ...	450,000.00	1.00	C., S. F. & C. Ry. Co.
The Sibley Bridge Co. Stock, 4,500 Shares, ...	450,000.00	450,000.00	Sibley Bridge Co.
The Sibley Bridge Co. Bonds,	850,000.00*	850,000.00	C., S. F. & C. Ry. Co.
The So. Kan. Ry. Co., of Texas, Stock, 6,045 Shares,	604,500.00	395,775.00	The So. Kan. Ry. Co.
The So. Kan. Ry. Co. Stock, 37,434 Shares, and $47.18 Scrip, ...	3,743,447.18	3,743,447.18	K.C., T. & W. R.R. Co.
Trinidad Coal & C. Co. Stock, 1,625 Shares, . .	162,500.00	162,500.00	P. & A. V. R.R. Co.
Totals, ...	$9,262,775.76	$7,385,977.52	

Also Marine Ry. & D. Dock Co., Stock, J. P. Whitehead, Trustee, Interest of California Central Ry. Co., per Books, Dec. 31, 1888, . $2,000.00

(The above Securities do not appear in General Account of A., T. & S. F. R.R. Co.)

*Pledged. † Total Capital Stock, $300,000.00. Not issued, $53,400.00.

	PAR.	COST.
GROSS TOTAL, ...	$9,264,775.76	$7,387,977.52
Less Pledged, ...	1,500,000.00	1,500,000.00
Unpledged, ...	$7,764,775.76	$5,887,977.52

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (CAPITAL ACCOUNTS).

PERMANENT INVESTMENTS—CONTINUED.

Property in Leased and Auxiliary Roads represented by Bonds deposited as Collateral for A., T. & S. F. R.R. Co., issues

Total as detailed below, ...	**$37,853,000.00**

SUNDRY TRUSTEES, AS COLLATERAL.

Boston Safe Deposit & Trust Co., Trustee:—

For A., T. & S. F. R.R. Co., Coll. Tr. 5% Bds.:	
Cal. Cent. Ry. Co., 1st Mtg. 6% Bds. Par . .	$6,457,000.00
Redo. Bea. Ry. Co., “ “ “ . .	270,000.00
C., S. F. & C. Ry. Co. Pek. Div. Mtg. 6% Bds. Par	733,000.00
Den. & S. F. Ry. Co., 1st Mtg. 6% Bds. Par	3,106,000.00
L. N. & S. Ry. Co., “ “ “	646,000.00
P. & A. V. R.R. Co., 2nd Mtg. “ “	500,000.00
St. J., St. L. & S. F. Ry. Co., 1st Mtg. 6% Bds. Par	1,907,000.00
The St. L., K. C. & C. R.R. Co., 1st Mtg. 6% Bds. Par	1,381,000.00
	$15,000,000.00
For A., T. & S. F. R.R. Co., 6% S. F. Secured Bonds,	
Elk & Chau. R.R. Co. 1st Mtg. 7% Bds. Par	142,000.00
Harvey Co. R.R. Co. “ 6% “	195,000.00
Kan. Cy. & Emp. R.R. Co., “ “ “	1,109,000.00
K. C., E. & S. Ry. Co., 2d Mtg. “ “	144,000.00
“ Howard Ext., 1st Mtg. “ “	100,000.00
K. C. & Olathe R.R. Co., “ “ “	350,000.00
K. C., T. & W. R.R. Co., 2d Mtg. “ “	795,000.00
Kan. Sou. Ry. Co., 1st “ “ “	594,000.00
L. N. & S. Ry. Co., 2d “ “ “	508,000.00
M. A. & B. Ry. Co., 1st “ “ “	339,000.00
M. & McP. Ry. Co 2d “ “ “	385,000.00
M. & McP. Ext. R.R. Co., 1st “ “ “	130,000.00
The So. Kan. Ry. Co., Girard Ext., ... “ “ “ “	135,000.00
The So. Kan. Ry. Co., Har. & West. Ext., . “ “ “ “	923,000.00
The So. Kan. Ry. Co., Kan. Cy. & Em. Div., 2d “ “ “	301,000.00
W. & So. W. Ry. Co., . . “ “ “ “	265,000.00
N. M. & Ariz. R.R. Co., 1st “ “ “	2,313,000.00
New Mexn. R.R. Co., “ “ “ “	1,070,000.00
N. M. & So. Pac. R.R. Co., 2d “ “ “	3,692,000.00
S. C. D. & P. R.R. Co., 1st “ “ “	708,000.00
P. & A. V. R.R. Co., 2d “ “ “	1,690,000.00
Carried forward, ...	$15,888,000.00

B—2. General Account, Dec. 31, 1888, continued.

Brought forward, ...	$15,888,000.00	
For A., T. &. S. F. R.R. Co., 4½% S. F. Bonds:		
R. G., M. & P. R.R. Co., 1st Mtg. 6% Bds. Par	4,650,000.00	
R. G. & El Paso R.R. Co., 1st " " "	500,000.00	
	5,150,000.00	
Total Boston Safe Dep. & Tr. Co., ...	$36,038,000.00	
NEW ENGLAND TRUST CO., TRUSTEE:—		
For A., T. & S. F. R.R. Co. 5% Mtg. Bonds:		
N. M. & So. Pac. R.R. Co. 1st Mtg. 7% Bds. Par	1,185,000.00	
THORNDIKE ET AL., TRUSTEES:—		
For Sinking Fund only, 5% A., T. & S. F. R R. Co. Bonds:		
K. C., T. & W. R.R. Co. 6% Bds. Par, . . .	630,000.00	
Total included in property account above and deducted in Gen'l Acct. sheet, ...		$37,853,000.00

OTHER TRUSTEE ACCOUNTS.

. . . . & LORD, TRUSTEES:—		
For A., T. & S. F. R.R. Co. Land Grant Mtg. Gold 7% Bonds: *		
Sonora Ry. Co. Ltd. 1st Mtg. 7% Bds. Par .	$1,098,000.00	
P. & A. V. R.R. Co. 2d Mtg. 6% Bds. Par .	80,000.00	
The So. Kan. Ry. Co. H. & W. Div. 1st Mtg. 6% Bds. Par	455,000.00	
Trinidad C. & C. Co. 1st Mtg. 6% Bds., $100,000 @	91,000.00	
S. Fd. 5% A., T. & S. F. Bds., Purchased $124,000 @	105,242.50	
The Kan. Cy. Belt Ry. Co. 1st Mtg. 6% Bds. Par	425,000.00	
A., T. & S. F. R.R. Co. 6% S. F. Sec. Bonds, Purchased 10,000, ...	10,350.00	
A. & P. R.R. Co. Guaranteed 4% Bds., $371,000 (Market value Dec. 31), ...	296,800.00	
		2,561,392.50
BOSTON SAFE DEPOSIT & TRUST CO., TRUSTEE:—		
or Securities deposited with them as Collateral for Guarantee Fund Notes:		
A., T. & S. F. R.R. in Chicago, 49,980 Shares Capital Stock, ...	$4,998,000.00	
Chicago, Santa Fé & Cal. R'y Co., 149,980 Shares Capital Stock, ...	14,998,000.00	
	$19,996,000.00	
Nominal, for book entry only,		2.00
Total Securities, the property of the A., T. & S. F. R.R. Co., held in trust as collateral, and hence not now available, ...		**$40,414,394.50**
Carried forward, ...		$40,414,392.50

* Sundry changes since made in collateral for this Trust.

B—2. General Account, Dec. 31, 1888, continued.

Brought forward, ...				$40,414,394.50
NEW ENGLAND TRUST CO., TRUSTEE:—				
For Sinking Fund Acct. 5% Bonds:				
Cash in hand for Sinking Fund Acct., A., T. & S. F. R. 5% Bonds, ...			12,636.78	
N. THAYER ET AL., TRUSTEES:—				
Sumner County R.R. Co. 1st Mtg. 7% Bonds:				
Cash in hand for payment of same, . . .			9,900.00	
N. THAYER ET AL., TRUSTEES:—				
So. Kansas & Western R.R. Co. 1st Mtg. 7% Bonds, Cash:				
	Sinking Fund.	*Bank Int.*		
1881–2		$358.88		
1883		138.82		
1884		192.30		
1885		184.38		
1886	$79.42	202.71		
1887	391.57			
1888	31,036.57			
	$31,507.56	$1,077.09		
			$32,584.65	
Total Cash in hands of Trustees for purchase of Bonds, ...				55,121.43
TOTAL—Sundry Trustees, ...				**$40,469,515.93**

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS.

OTHER INVESTMENTS.

BONDS AND STOCKS OF LEASED, CONTROLLED, AUXILIARY AND OTHER COMPANIES OWNED BY ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY, AND NOW IN TREASURY.

STOCKS.			PAR.	LEDGER COST.
A. T. & S. F. Rd. Cap. Stock,	44 shares		$4,400.00	$4,400.00
A. T. & S. F. Rd. Cap. Stock. (for G. C. & S. F. R'y Stock),		“	10,000.00	10,000.00
A. T. & S. F. Rd. Cap. Stock, in escrow F. L. & T. Co., N.Y.,			7,500.00	7,500.00
A. A. Glasier, acct. Cap. Stock,			12,571.20	12,571.20
A. T. & S. F. R.R. Co. Cap. Stock,	4	“	400.00	337.33
Arizona So. R.R. Co. Stock,	1,000	“	100,000.00	10,853.29
American Cattle Trust, E. W. Kinsley, Tr.,	2,000	“	50,000.00	50,000.00
Atchison City Elev. Co. Stock,	261	“	26,100.00	26,100.00
Atchison City Union Depot Co. Stock.,	9	“	9,000.00	9,000.00
Kansas City Union Depot Co. Stock,	210	“	21,000.00	21,000.00
St. Joseph Union Depot Co. Stock,	10	“	1,000.00	5,500.00
Arkansas Valley Elevator Co. Stock,	975	“	97,500.00	146,250..00
Aztec Land & Cattle Co., I. T. Burr, Tr., Stock,	2,157	“	215,700.00	215,700.00
Topeka Equipment Company,	2,550	“	255,000.00	255,000.00
Atlantic & Pacific Equipment Co., Stock,	1,635	“	163,500.00	163,50000
Raton Water Co., Stock,	500	“	50,000.00	50,000.00
Raton Coal & Coke Co., Stock,	5,000	“	500,000.00	1.00
La Junta Water Co., Stock,	220	“	22,000.00	22,000.00
Osage Carbon Co., W. B. S., Tr., Stock,	3,000	“	300,000.00	244,150.37
San Pedro Coal & Coke Co., Stock,	400	“	40,000.00	51,250.00
Scandinavian C. & M. Co., W. B. S., Tr., Stock,	100	“	10,000.00	6,000.00
Arizona Min. Belt R.R. Co.,—				
Min. Belt Coal & I. Co. Stock,	240	“	24,000.00	25,500.00
A. M. B. R.R. Co. Bonds,	30		30,000.00	
Prescott & Arizona Cent. R'y Co.,—Stock,	349 shares		34,900.00	43,200.00
“ “ “ “ “ Bonds,	48		48,000.00	
			$2,032,571.20	$1,379,813.19
BONDS.				
Kan. City, Top. & West. R.R. Co. 6%,			$893,800.00	893,800.00
N. Mex. & Ariz. R.R. Co. 2nd Mtg. 6%,			950,000.00	950,000.00
Atlantic & Pacific R.R. Co. W.D. Inc. Listed,			45,000.00	452,485.66
Atlantic & Pacific R.R. Co. W.D., Inc,			549,500.00	
Atlantic & Pacific R.R. Co. Stock, W.D. 9,218 shs.,*			921,800.00	
Atlantic & Pacific R.R., C.D. Inc.,			687,000.00	
Chicago, Kansas & Western R.R. Co. Inc. & Scrip,			1,000.00	1,000.00
Chicago, Kansas & Western R.R. Co., Incomes,			131,500.00	1.00
Chicago, Kansas & Western 1st Mtg. 5% & Scrip,			2,000.00	2,000.00
California Southern R.R. Co. Inc. Bonds & Scrip,			1,022.45	1,022.45
Atchison, Topeka & Santa Fe R.R. Co. Coll. Tr. 5%,			1,500.00	1,500.00
A., T. & S. F. R.R. Co. 4½% S. F. Bonds,			2,000.00	1,946.00
Aztec Land & Cattle Co. 1st Mtg. 6%,			80,000.00	72,000.00
Kansas City Belt Ry. Co. 1st Mtg. 6%,			90,000.00	90,000.00
			$4,356,122.45	$2,465,755.11
MISCELLANEOUS.				
Steamship “City of Topeka” ⅞ Int.,			121,517.97	121,517.97
Leav. Northern & Southern Coal Lands,			25,535.00	25 ,535.00
Grant Co. Funding Bonds,			200 00	140.00
Rush Co. Funding Bonds,			2,000.00	2,000.00
Deposit in B. S. D. & T. Co. for C. S. R.R. Co. Bds.			2,000.00	6,175.44
			$151,252.97	$155,368.41
AGGREGATE (PAR),			$6,539,946.62	
(LEDGER COST)				**$4,000,936.71**

*See also Statement B.—1.

D. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS.

EQUIPMENT LEASES.

Rolling Stock being acquired under deferred Payments as Rental.

Indianapolis Car & Mfg. Co.:				
Contract of Lease May 1, 1888:				
2,000 Gondola Coal Cars, A., T. & S. F. R.R. Co., Nos. A 34, 441–A 38, 439, odd nos. inclusive, ...			$1,020,000.00	
Less Adjustment of Cost, ...			37,220.00	
			$982,780.00	
Cash, .	$51,000.00			
Less, .	37,220.00	13,780.00		
Warrants, ...		969,000.00		
		$982,780.00		
Payments to Dec. 31 (2,000 cars del'd),				
Cash (Net), . . .		$13,780.00		
Warrants, ...		969,000.00		982,780.00
St. Charles Car Company, St. Charles, Mo.:				
Contract of Lease, May 1, 1888:				
1,000 Gondola Coal Cars, A., T. & S. F. R.R., Nos. A 39, 441–A 40, 439, C., S. F. & C. Ry., Nos. D 38, 441–D 39, 439, odd nos. inclusive, . .			$501,750.00	
Cash, ...		$25,090.00		
Warrants, ...		476,660.00		
		$501,750.00		
Payments to Dec. 31 (Cars del'd, 500),				
Cash, ...		$17,563.00		
Warrants, ...		333,662.00		351,225.00
Balance yet to be paid:				
In Cash, ...		$7,527.00		
In Warrants, . .		142,998.00		
In all, . . .		$150,525.00		
Indianapolis Car & Mfg. Co., . . .				
Add Frt. & other Chgs., ...				34,323.97
St. Charles Car Company, ...				
Add Frt. & other Chgs., ...				2,019.30
Value of Equipment Leases to Dec. 31, Covering Rolling Stock, Del'd,				**$1,370,348.27**

E. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES.

SUNDRY SUBSCRIPTIONS.

Miscellaneous:

Subscription Acct., Cir. 59,	$4,500.00	
Expenses and Interest, Cir. 59,	85.00	
Total,		$4,585.00

F. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (DEFERRED RESOURCES).

SUNDRY ADVANCES.

SURVEYS NEW LINES, REAL ESTATE, ETC. — EXPENDITURES WHICH WILL BE ULTIMATELY, WHEN ADJUSTED, CHARGED TO "COST OF PROPERTY" OF "AUXILIARY COMPANIES."

Surveys, New Lines,	$20,956.61	
" In Missouri,	132.89	
" " Kansas,	24,867.73	
" " Colorado,	14,391.69	
" " New Mexico,	1,918.35	
" Coal and Prospecting,	16,153.48	
" New Mexico Coal Survey,	361.00	
R. of Way, New Mexico (Allen),	212.50	
" Kansas (Coldren),	29.00	
Clerk Dist. Court, Colorado,	60.00	
L. Severy, Real Estate, Emporia, Lyon Co.,	500.00	
Lot 7, Silver City, Taxes and Cost,	61.71	
Harvey Co., Land W. S. & W. Junc. Taxes,	434.13	
Winfield Land at Junction, Cost,	13,150.49	
Elk County, Land at Moline, Taxes,	217.26	
San Marcial Lots, N. M. Land Co.,	170.65	
Abilene Lots, 4 and 5, outside R. of W.,	1,055.53	
Abilene; Land Adjoining (C. K. & W.),	4,741.71	
Woodson Co. Land, near Yates Centre (C. K. & W.),	10,158.44	
C. W. Smith, Tr., Land at Emporia,	6,667.71	
H. Hedderman, paid on Account Construction, etc.,	5,000.00	
New Mexico Irrigation Account,	3,000.00	
Cooley County, payment,	1.00	
Sundry Lands in Trust, Taxes paid,	667.12	
Coal Lands in Trust, Interest on Note,	166.56	$125,075.56
Less Credits:		
I. Mulvane, C. K. & W. R.R. Construction,	232.25	
C. B. Kilmer, R. of Way,	71.10	
W. A. Drake, "	.97	
H. L. Waldo, "	342.88	647.20
Total (Net),		**$124,428.36**

G. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES (DEFERRED OBLIGATIONS).

TRUSTEES' LAND GRANT.

	PAR.	
Acct. No. 1, to Dec. 31, 1884.		
A., T. & S. F. R.R. Co. Note of Jan. 1, 1885, secured by sundry Bonds as collateral, viz.: —		
Sonora R'y Co. Ld. 1st Mg. 7% Bonds, . .	$1,098,000.00	
The K. C. B. R'y Co. 1st Mg. 6% Bonds, .	325,000.00	
Trinidad C. & C. Co. 1st Mg. 6% Bonds, .	100,000.00	
A. & P. R.R. Co. Guar. Trust 4% Gold Bonds,	33,000.00	
A., T. & S. F. 6% S. F. Secured Bonds, . .	10,000.00	
A., T. & S. F. 5% S. F. Secured Bonds, . .	124,000.00	
	1,690,000.00	1,498,026.93
Acct. No. 3, Jan. 1, 1885, to June 30, 1885.		
A., T. & S. F. R.R. Co. Note of July 1, 1885, secured by sundry Bonds as collateral, viz.: —		
The So. Kan. R'y Co., H. & W. Div. 1st Mg. 6% Bonds, ...	455,000.00	
A. & P. R.R Co., Guar. Trust 4% Gold Bonds,	130,000.00	
	585,000.00	500,676.49
Acct. No. 4, July 1, 1885, to Sept. 30, 1885.		
A., T. & S. F. R.R. Co. Note, Jan. 1, 1885, secured by sundry Bonds as collateral, viz.: —		
A. & P. R.R. Co., Guar. Trust 4% Gold Bonds,	208,000.00	
The Kansas City Belt R'y Co., 1st Mtg. 6% Bonds, ...	100,000.00	
P. & A. V. R.R. Co., 2d Mtg. 6% Bonds, .	80,000.00	
	388,000.00	332,087.67
Total (in "Trustee" Acct. at cost, $2,570,667.50).		
Par of Security, ...	2,663,000.00	
Notes, ...		**$2,330,791.09**
LAND DEPARTMENT RECEIPTS.		
Acct. No. 5, from Oct. 1, 1885, to date.		
Net credit, ...	1,981,367.01	
Land Dept. Cash Receipts, Dec. 31, 1888. . .	7,027.54	
		$1,988,394.55
Aggregate of Notes and Credit, Dec. 31, 1888,		**$4,319,186.64**

H.— General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (DEFERRED RESOURCES).

SUSPENDED ACCOUNTS, NOT IMMEDIATELY AVAILABLE.

Notes Receivable, Boston Office:			
E. B. Perrin, January, 1886, secured by land,		$29,866.66	
Aztec Land & Cattle Co., January, 1888, secured by $113,000 Bonds A. L. & C. Co.,	$62,500.00		
	16,000.00	78,500.00	
H. W. Gardiner, Trustee, A. & P. R.R. Co., Note purchased, secured,		61,511.08	$169,877.74
Southern Pacific R.R. Co.:			
For amount charged under contract of June 27, 1881, for interest on one-half cost Construction and Rolling Stock, New Mex. & Ariz. R.R., Sonora Extension,		595,615.58	
Less:			
(As this item is in dispute, its corresponding credit is here deducted for present accounting.)			
New Mexico & Arizona Interest:			
For amount of credit for charge to So. Pacific R.R. Co., as above,		595,615.58	
E. B. Purcell, Expenditure:			
Through him,			25,000.00
P. J. Flynn, F'rt. Account:			
At Denver, matter in adjustment,			23,121.94
Auditor, Topeka, Miscellaneous Acc'ts, in adjustment,			3,070.22
Sundry Items through Treasurer:			
E. B. Purcell, account D. W. F.,			500.00
Total Dr.,			$221,569.90
Less Credits:			
Denver, Texas & Fort Worth Ry., Freight on New Cars,		4,425.55	
* Sundry Items from Operations:			
Not yet applied, Net *Cr.*,		80,260.75	84,686.30
Total Suspended Accounts (Net) Dr.,			**$136,883.60**

* MEMORANDUM OF ITEMS IN SUSPENSE, UNAPPLIED, ARISING FROM OPERATIONS TO DEC. 31, 1888.

Earnings:			
Mail Earnings,			$5,041.52
Freight Earnings,		$105,799.51	
Deduct:			
Prop. of Corporation Expense Bills,	$4,290.10		
R. E. Thomas,	3,264.49		
Brown & Manzares Co.,	5,699.34		
W. Resor & Co.,	1.25		
H. L. Bickford,	19.50		
Sundry Agents,	155.39		
C. R. Hudson, G. F. Agt.,	17.28	13,447.35	92,352.16
Accident Ins. Co. Commissions,			1,276 65
EARNINGS, Total (Net) Credit,			$98,670.33
Expenses:			
G. R. Peck, Advances, Expenses,	$750 00		
E. E. Bacon, " "	72.50		
A. B. Leet, " "	168.18		
E. T. Cortlidge, " "	20.70		
O. M. McConnell, " "	76 60		
C. S. Gleed, " "	50.00		
C. M. Foulkes, Acct. Loss & Damage,	250.00		
Gen'l Pass. & Ticket Agent,	15,500.26		
W. F. White, Traff. Mgr. Expenses of Agencies,	883.04		
J. H. Belcher, Account Expenses,	65.03		
E. Wilder, No. 1,	572.37		
Cherokee Ticket Account,	87.50	$18,496.18	
Less Credits:			
I. G. Eagan, Account Expenses (Cr.),	2.35		
Ticket Expenses (Cr.),	84.25	86.60	
EXPENSES, Total (Net) Debit,			18,409.58
BALANCE, Net Credit,			$80,260.75

I.—General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (DEFERRED RESOURCES).

MATERIAL AND FUEL IN STOCK.

Fuel,	$162,568.94	
Stationery,	15,479.61	
Material and Supplies,	1,226,800.99	
		1,404,849.54
Corporation Expense Bills:*		
Stocks,—Fuel, Stationery, and Stores,	5,737.46	
" So. Kansas R'y,	9,248.59	
Advances on Material,	4,920.62	19,906.67
Aggregate,		**$1,424,756.21**

---

*Freight charges advanced by other roads and not yet distributed to the several classes of Material.

J.—General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES (DEFERRED OBLIGATIONS).

EQUIPMENT LEASE WARRANTS ISSUED TO, AND OUTSTANDING, DECEMBER 31.

		WHOLE AMOUNT TO BE ISSUED.	ISSUED TO DEC. 31.	TO BE ISSUED WHEN BALANCE OF CARS ARE DELIV'RD.
Under Equipment Leases with Indianapolis Car & Mfg. Co., Indianapolis, Ind.:				
Due Dec. 1, 1889 (Each Warrant),	$24,225.00	$484,500.00	$484,500.00	
June 1, 1890 " "	12,112.50	242,250.00	242,250.00	
Dec. 1, 1890 " "	12,112.50	242,250.00	242,250.00	
		$969,000.00		
Total I. C. & M. Co. to Dec. 31,			$969,000.00	
St. Charles Car Company, St. Charles, Mo.:				
Due Jun. 1, 1890 (Each Warrant),	$11,916.50	$238,330.00	$166,831.00	$71,499.00
Dec. 1, 1890 " "	5,958.25	119,165.00	83,415.50	35,749.50
Jun. 1, 1891 " "	5,958.25	119,165.00	83,415.50	35,749.50
		$476,660.00		$142,998.00
Total St. C. Car Co. to Dec. 31,			$333,662.00	

Aggregate outstanding Equipment Lease Warrants, Dec. 31, **$1,302,662.00**

Summary (December 31) showing Total due Each Date.

WHEN DUE.		ISSUED.	TO BE ISSUED.	TOTALS.
Dec. 1, 1889, I. C. & M. Co.,		$484,500.00		$484,500.00
Jun. 1, 1890:				
I. C. & M. Co., ...	$242,250.00			
St. C. C. Co., . . .	166,831.00			
		409,081.00	71,499.00	480,580.00
Dec. 1, 1890:				
I. C. & M. Co., ...	$242,250.00			
St. C. C. Co., . . .	83,415.50			
		325,665.50	35,749.50	361,415.00
Jun. 1, 1891, St. C. C. Co.,		83,415.50	35,749.50	119,165.00
		$1,302,662.00	$142,998.00	$1,445,660.00

“K” General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (AUXILIARY COMPANIES).

Due from Sundry Leased, Controlled, and Auxiliary Roads and Companies in Construction and General Account, Dec. 31, 1888.

Arkansas Valley Elevator Company,			$12,284.54
Arizona Mineral Belt R.R. Co.,		$34,929.58	
“ “ “ Fr't Acct.,		6,641.19	41,570.77
A., T. & S. F. R.R. Co. in Chicago,			262,737.95
Aztec Land & Cattle Co. Frt. Account,			2,906.37
Cal. Cent. R'y Co. Current Account,			*810,809.67
Cal. Southern R.R. Co. Current Account,		544,270.65	
“ “ “ “ Freight Account,		725.42	544,996.07
C., K. & W. Current Account,	Dr.	512,644.23	
“ “ “ Discharge Checks,	“	1,566.78	
“ “ “ Cash Account,	“	77,815.86	*592,026.87
Chicago, S. F. & Cal. R'y Co.,		4,601,980.54	
Sibley Bridge Co.,		4,882.23	
C., S. F. & C. R'y Co., Cash Item,		20,550.22	4,627,412.99
F., E. & W. V. Acct. Constn. Ex. B.,			76,244.50
F., E. & W. V. R.R. Co.,		4,622.38	
“ “ “ “ “ Acct. Rental and Coupons,		46,510.77	51,133.15
Gulf, Colorado & Santa Fé R'y Co.,		359,208.65	
“ “ “ “ “ (coal),		21,951.74	381,160.39
Kansas, Colorado & Texas R.R. Co.,			30,000.00
K. C., E. & S. R'y Co. Current Account,			7,597.66
K. C., T. & W. R.R. Co. Current Account,	Dr.	182,139.90	
K. C., T. & W. R.R. Co. Acct. Kan. City Belt R.R. Co.,	Cr.	1,937.71	180,202.19
Kansas City Union Depot Company,			133.89
Keokuk & Santa Fé R.R. Construction,			15,378.17
La Junta Water Co. Cash Account,			6,921.10
Leav., Top. & So. West. Cash Acct.,		70,094.45	
“ “ “ “ 12 mos. Int. on B. to Dec. 31,		27,600.00	
“ “ “ “ Acct. Construction,		7,056.53	104,750.98
Amount carried forward,			$7,748,267.26

*See Statement Q-4 for offsetting Credits.

"K" General Account, Dec. 31, 1888, continued.

Amount brought forward			$7,748,267.26
Magdalena Town Co. Cash Account,			2,418.53
Manhattan, Alma & Burlingame R'y Co. Cash Account,			24,010.37
Marion & McPherson R'y Co. Construction,			22,283.38
New Mexican R.R. Routes 1 and 3,			8,877.15
New Mexico & Arizona R.R. Constn.,	Dr.	57,801.81	
" " " " Cash Account,	Cr.	76,461.36	
" " " " Pay Checks. W. B. Walsh,	Dr.	987.73	Cr. 17,671.82
N. M. & S. P. Current Account,			373,577.43
Osage Carbon Company, Cash Account,			3,389.30
Raton Coal Property,	Dr.	100,000.00	
Raton Coal & Coke Co. Cash Account,	Dr.	21,584.77	121,584.77
Rio Grande Land Co. Cash Account,			87,915.55
St. Louis, Kansas City & Col. R.R. Co.,			1,088,191.90
San Pedro Coal & Coke Co.,	Dr.	120,000.00	
" " " Cash Account,	Cr.	14,458.83	105,541.17
Santa Fé Land & Town Co. Cash Account,			23,777.53
Silver City, Dem. & Pac. R.R. Co.,		16,465.76	
" " " " " Doubtful Assets,		8,329.58	
	Dr.	24,795.34	
Silver City, Dem. & Pac. R.R. Co., Contractors,	Cr.	7,021.18	17,774.16
Sonora R'y Co. Current Account,	Dr.	130,456.72	
" " Overdue Guar. Coupons,	Dr.	141,750.00	
Guaymas Hotel,	Dr.	2,625.00	
Total,	Dr.	274,831.72	
Auditor Sonora R'y Co. Cash Acct.,	Cr.	8,812.79	266,018.93
The So. K. R'y. Co., Kan., So. Constn.	Dr.	2,722.34	
The So. K. R'y, Girard & Frontenac Extensions,		66,710.13	
The So. K. R'y, K. C. & E.,		106,704.69	
Amounts carried forward,		$176,137.16	$9,875,955.61

"K" General Account, Dec. 31, 1888, continued.

Amount brought forward,		$176,137.16	$9,875,955.61
The S. K. R'y, Har. & West. R.R.,		1,300.22	
" " " Medicine Lodge Ext.,		62,065.81	
Cherokee & Pitts. C. & M. Co., Cash Acct.,		66,838.12	
Hunnewell Town Co., Cash Acct.,		17.46	
		Dr. 306,358.77	
The S. K. R'y Current Acct.,	Dr. 17,475.80		
" " " K. C. & O.,	Cr. 8,565.15		
" " " Ind. Ter. Ext.,	Cr. 129,036.91		
	Cr. 120,126.26		
Sec. of Int. R. of W. Arkansas City,	Dr. 14,705.88		
		Cr. 105,420.38	200,938.39
S. S. City of Topeka, Supplies and Expenses,		Dr. 41,310.20	
" " " Profit and Loss,		Dr. 7,309.60	
		Dr. 48,619.80	
S. S. City of Topeka,		Cr. 5,886.83	42,732.97
Topeka & Western R'y Construction,			10,485.44
Wichita & So. Western R'y Co., Current Acct.,			99,237.69
Wichita & Western R.R. Co., Current Acct.,			58,000.00
The New Mexico Central R.R. Co., Expense Acct.,			7.50
Williamsburgh Coal Lands,			8,000.00
Auxiliary Cos.: Corporation Expense Bills,			11,000.54
Harrison Mining Machine, E. Wilder, Trustee,			11,425.67
			$10,317,783.81
ATLANTIC & PACIFIC R.R. CO. Loan Account,		2,088,554.83	
ATLANTIC & PACIFIC R.R. CO. Contribution Account,		1,149,339.55	3,237,894.38
Aggregate,			**$13,555,678.19**

K.K. GENERAL ACCOUNT, DEC. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES (AUXILIARY COMPANIES).

DUE TO SUNDRY LEASED, CONTROLLED, AND AUXILIARY ROADS AND COMPANIES IN CONSTRUCTION AND GENERAL ACCOUNT, DEC. 31, 1888.

DEMING TOWN CO. Cash Account, . . .				$6,095.08
NEW MEXICO TOWN CO. Cash Account, .				2,663.79
PUEBLO & ARK. VALLEY R.R. Co. Current Account, ...	Cr.		$243,932.31	
Do. Clerk Dist. Court, Fremont Co., Col., ...	Dr.	$1,455.00		
Do. Canon City Coal Cash Acct.,	Dr.	132,856.26		
Do. Lands at Canon Cy., . . .	Dr.	4,329.72		
Trinidad C. & C. Co. Cash Acct., . .	Dr.	46,342.26		
" " " Land at Starkwell,	Dr.	23,032.49		
" " " C. Yeomans, Coal Explorations, ...	Dr.	500.00		
	Dr.		208,515.73	35,416.58
RATON WATER Co. Cash Account, . . .				1,516.25
RINCON TOWN Co. Cash Account, . . .				1,003.23
SANTA FE EMPLOYEES' ASSOCIATION, . .				27,462.77
ST. JOS., ST. LOUIS & S. F. RY. Co., .	Cr.	$221,377.98		
St. Jos. & St. Louis Stock, ...	Cr.	4,000,00		
	Cr.		$225,377.98	
St. J. & S. F. R.R., W. M. Smith . .	Dr.		40.00	
				225,337.98
TOPEKA IRON Co. Cash Account, . . .				2,356.54
W. I. WAY LIBRARY FUND Cash Account,				2,374.60
TOTAL CREDIT, ...				**$304,226.82**

"L" General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (CURRENT RESOURCES).

ACCOUNTS RECEIVABLE.

Due from Agents, Sundry Companies, Individuals, U.S. Government etc., etc., in Current Account.

Agents and Conductors,		$478,921.06	
Contingent Funds:			
Gen'l Agent, New York City,	3,000.00		
" " Boston,	1,500.00	4,500.00	
Cashier's Suspense Account,		24.35	
		483,445.41	
Less Treas. Suspense Account (Cr.),		47.84	$483,397.57
U.S. Government, Frt Acct., Old,	4,519.87		
" " Passr " "	8,200.48	12,720.35	
" " Freight,		45,354.41	
" " (Trs.) S.K. Ry.,		4,674.10	
" " Passr Acct.,		79,009.93	
" " (Qrtr) S.K. Ry.,		479.21	
" " P.O. Dept.,		120,039.72	
" " " S.K. Ry.,		2,355.70	
" " Geological Survey, Frt Acct.,		37.65	
		264,671.07	
Less Payments by U.S. Government on acct.,		195.95	264,475.12
Sundry Companies and Individuals:			
Bills Collectible, S.K. Ry.,		7,448.75	
" " General,		459,991.10	
Wells, Fargo & Co., for Express Transportation,		110,113.51	
Western Union Tel. Co., Gen'l Acct.,	5,334.57		
Indianapolis Car & Mfg. Co., " "	37,442.90		
Union Depot Co., Kan. Cy., for Div'd due,	40,000.00		
Atlantic & Pac. Equipm't Co., Gen'l Acct.,	21,929.72	104,707.19	
		682,260.55	
Less Credits, viz.:			
Claim Agent,	904.35		
Gen'l Freight Agent,	14,963.51		
Fierce & McDougall,	233.00	16,100.86	666,159.69
Amount carried forward,			1,414,032.38

"L" General Account, Dec. 31, 1888, continued.

Amount brought forward,		$1,414,032.38
FOREIGN ROADS:		
Claims (Net),	192,280.81	
Ticket Account,	18,336.43	
Freight Account,	40,543.11	
Cen. Pac. R.R. Co., Gen'l Account,	11,500.78	
So. Pac. R.R. Co., Pac. System, Deming Bal.,	10,917.94	
Mex. Cent. R'y Co., Coal Acc't,	23,059.94	
B. & M. R.R. Co., in Neb., Coal Acc't,	21,096.82	317,735.83
		1,731,768.21
SUNDRY FOREIGN ROADS, CLAIM ACCOUNT:		
Atlantic & Pacific, Rebate Acc't,	54,791.84	
Unadjusted Claims, A. & P., " " C. P. R., " " D. & R. G., " " Mis.,	26,529.20	
Through Fr't Suspense Acc't (For. Roads),	28,942.30	110,263.34
MISCELLANEOUS:		
Shawnee County Ticket orders,	22.56	
Kansas Grain & Live Stock Co., Fr't Acc't,	10,529.17	
H. C. Slavens, "	354.52	
Delaney & Terrell, "	559.69	
G. H. Evans, Hutchinson, "	43.12	
M. L. Bell, Capital File Works, "	40.00	
W. U. Telegraph Co., "	4,467.12	
R. B. Gemmell, Supt. Tel. Collection Ac.,	1,093.88	
Michigan Pipe Co., Fr't Charges,	150.62	
R. Lake Mtg. Note (Mulvane),	3,000.00	20,260.68
AGGREGATE ACCOUNTS RECEIVABLE, DUE FROM OTHERS THAN AUXILIARIES,		**$1,862,292.23**

CURRENT TRAFFIC AND OPERATING ACC'TS DUE FROM AUXILIARY COMPANIES:

Freight Account,	53,285.54	
D. & R. G. (Government), "	2,194.78	
Sonora R'y Co. Ltd., "	2,564.85	
Pueblo Smelting & R. Co., Coke Account,	136.95	
Car Service,	65,958.33	
Bills Collectible,	750,314.25	
" " So. Kan. R'y,	23,847.96	
Claims (Net),	73,622.01	
Through Freight Suspense Ac.,	36,620.19	
TOTAL DUE FROM AUXILIARIES, IN CURRENT OPERATING AND TRAFFIC ACCOUNTS		**$1,008,544.86**

L.L. GENERAL ACCOUNT, DEC. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES (CURRENT OBLIGATIONS).

ACCOUNTS PAYABLE.

DUE TO SUNDRY COMPANIES, INDIVIDUALS, ETC., IN CURRENT ACCOUNT.

AUDITED VOUCHERS:		
To Others than Auxiliaries, ...	$1,021,856.90	
Southern Kansas Ry. Vouchers, ...	1,407.39	
Land Department Vouchers, ...	1,014.17	
	1,024,278.46	
Less Payments:		
Tax Acct., ...	65,271.61	
TOTAL VOUCHERS, ...		$959,006.85
DUE FOR WAGES:		
Pay-rolls for December, ...	563,675.06	
Pay Checks, ...	161,089.35	
Pay Checks S. K. Ry., ...	596.83	
Unpaid Rolls (New), ...	5,389.46	
Construction Rolls, ...	10,761.21	
	741,511.91	
LESS:		
Discharge Checks, ...	426.11	
TOTAL PAY-ROLLS, ...		741,085.80
SUNDRY ROADS AND COMPANIES:		
Surplus Freight Prepayments, ...	10,740.24	
So. Pac. Ry. Co., Pac. Sys. Gen'l Acct., ...	106.98	
Foreign Roads Prepaid Frt. Chgs., ...	6,533.97	
Foreign Roads Car Service, ...	28,100.98	
Foreign Roads Ticket Acct., ...	60,358 33	
St. Louis & S. F. R.R. Co. Pool, due under agreement Oct. 5, 1886, ...	108 969.14	
TOTAL SUNDRY ROADS AND COMPANIES, .		214,809.64
Carried forward, ...		$1,914,902.29

L.L. General Account, Dec. 31, 1888, continued.

Brought forward, ...		$1,914,902.29
MISCELLANEOUS:		
Agents' Unpaid Drafts, ...	33,704.54	
" " " S. K. Ry., ...	7.39	
Total Miscellaneous, ...		33,711.93
AGGREGATE ACCOUNTS PAYABLE DUE TO OTHERS THAN AUXILIARIES, ...		**1,948,614.22**

DUE TO AUXILIARY COS. IN CURRENT TRAFFIC AND OTHER ACCOUNTS:		
Auxiliary Companies, for Expr. Egs., ...	34,286.70	
Ticket Account, ...	62,167.73	
Vouchers, So. Kan. Ry., Various, ...	62.14	
" New Account, "	392,767.43	
TOTAL DUE TO AUXILIARIES IN CURRENT TRAFFIC AND OTHER ACCOUNTS, ...		**$489,284.00**

M. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (CURRENT RESOURCES).

BILLS RECEIVABLE.

Bills Receivable, Lawrence,		$2,000.00
Notes Receivable, Topeka,		129.59
Notes and Loans Receivable, Boston,	$169,877.74	
Less Items temporarily carried to "Deferred Resources," as not being immediately available,	169,877.74	
		$2,129.59

N. General Account, Dec. 31, 1888.

LIABILITIES (CURRENT OBLIGATIONS).

NOTES AND BILLS PAYABLE.

At Topeka,	$1,349,591.81	
At Boston,	3,255,569.62	
		$4,605,161.43 *

Due from January to July, 1889.

---

* $600,961.29 of Topeka Notes and $1,823,277.33 of Boston, in all $2,424,238.62, paid to March 31, 1889.

O. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ASSETS (CURRENT RESOURCES).

CASH ACCOUNTS.

SUNDRY DEPOSITS FOR COUPONS:				
Nat'l Union Bank	Acct.	Coupons,	$57,695.00	
Nat'l Bank Commerce, N.Y.	"	"	18,130.00	
North Nat'l Bank	"	"	274,625.00	
Boston S. D. & T. Co.	"	"	10,122.50	
Everett Nat'l Bank	"	"	33,540.00	
Boston Nat'l Bank	"	"	8,574.50	
American Loan & Trust Co.	"	"	13,840.00	
Nat'l Bank of No. America	"	"	147,565.00	
Bank, Rotterdam, Holland	"	"	16,065.00	
				$580,157.00
SUNDRY DEPOSITS FOR DIVIDENDS:				
Hanover Nat'l Bank, New York,			$459.50	
National Bank of No. America,			22,557.75	
Merchants Loan & Tr. Co., Chicago,			354.00	
				23,371.25
CASH, TREASURER, TOPEKA:				
Balance,			$803,094.34	
Less Dr. Balance V. P. L.,			651,188.54	
Balance Cash and Bank Balances,				151,905.80
CASH, Asst. Treasurer, Boston,				660,059.99
AGGREGATE OF CASH AND CASH DEPOSITS,				**$1,415,494.04**
GUARANTEE FUND NOTES:				
IN TREASURY, SUBSCRIBED FOR, BUT NOT CALLED AND HENCE NOT ISSUED TO DEC. 31,				**$4,200,000.00**

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES (CURRENT OBLIGATIONS).

COUPONS, DIVIDENDS, ETC., DUE AND PAST DUE.

BOND INTEREST COUPONS, DUE JAN. 1, 1889:			
A. T. & S. F. R.R. Co., 1st Mtg.,		$246,435.00	
K. C. T. & W. R.R. Co., "		29,890 00	
L. T. & S. W. Ry. Co., Gen'l Mtg.,		13,800.00	
So. Kan. & W. R.R. Co., 1st Mtg.,		57,120.00	
K. City, E. & S. R.R. Co., "		18.620.00	
Pueblo & A. V. R.R. Co., "		57,155.00	
Pueblo & A. V. R.R. Co., "		72,870.00	
W. & So. W. R.R. Co., "		14,420.00	
			$510,310.00
BOND INTEREST COUPONS, PAST DUE, NOT PRESENTED:			
A. T. & S. F. R.R. Co. Issues		52,010.00	
K. C. T. & W. R.R. Co.,	157.50		
L. T. & S. W. Ry. Co.,	40.00		
K. C. E. & S. R.R. Co.	1,190.00		
F. E. & W. V. R.R. Co.,	350.00		
M. & Mc. P. R.R. Co.,	350.00		
W. & So. W. R.R. Co.,	315.00		
C. S. & F. S. R.R. Co,	665.00		
P. & A. V. R.R. Co.,	3,640.00		
N. M. & S. P. R.R. Co.,	4,340.00		
K. C. L. & S. R.R. Co.,	1,135 00		
So. Kan. & W. R.R. Co.,	245 00		
Sumner County R.R. Co.,	140.00		
The So. Kan. Ry. Co.,	4,582.00		
The So. Kan. Ry. Co. of Texas,	1,092.50		
		18 242.00	
Old overdue Coupons not presented,		2.490.00	
Total past due, not presented,			72.742.00
AGGREGATE COUPONS DUE AND PAST DUE,			**583,052.00**
SCRIP CERTIFICATES UNPAID,			**195.00**
DIVIDENDS PAST DUE, NOT CLAIMED:			
Div. No. 12, Payable Aug. 12, '82,	22.50		
" 15, " May 15, '83,	15.00		
" 19, " May 15, '84,	4 50		
" 20, " Aug. 15, '84,	109 50		
" 21, " Nov. 15, '84,	13 50		
" 22, " Feb. 16, '85,	138.00		
" 23, " May 15, '85,	12 00		
" 24, " Aug. 15, '85,	106.50		
" 25, " Nov. 16, '85,	18.00		
" 26, " Feb. 16, '86,	31.50		
" 27, " May 15, '86,	861.00		
" 28, " Aug. 16, '86,	826 50		
" 29, " Nov. 15, '86,	795.00		
" 30, " Feb. 15, 87,	815.00		
" 31, " May 16, '87,	1,068.00		
" 32, " Aug. 15, '87,	1,023.00		
" 33, " Nov. 15, '87,	1,202.25		
" 34, " Feb. 15, '88,	1.624.00		
" 35, " May 15 '88,	1,843.50		
" 36, " Aug. 15, '88,	5,145.00		
" 37, " Nov. 15, '88,	8,000.00		
		23,674.25	
Old Dividends uncalled for,		25.50	
TOTAL DIVIDENDS NOT CALLED FOR,			**23,699.75**
AGGREGATE COUPONS, DIVIDENDS, ETC., DUE AND PAST DUE,			**$606,946.75**

P. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES.

CURRENT OBLIGATIONS, ACCRUED, BUT NOT YET DUE.

Interest on Bonds Accrued to Dec. 31, but not due until stated.

Fixed Charges on A. T. &S. F. Proper:—

			ISSUE.	INTEREST.	COUPON DATE.
A. T. & S. F., S. F. 5%,	4 mos.,	5 % on	$3,444,000.00	$57,400.00	Mar. 1, 1889.
" Consol. Mg.,	3 "	7 "	108,500.00	1,898.75	Ap'l 1, "
" Coll. 5s,	5 "	5 "	15,000,000.00	312,500.00	Feb. 1, "
" 5% Bds.,	3 "	5 "	940,000.00	11,750.00	Ap'l 1, "
" 4½ S. F.,	3 "	4½ "	4,532,000.00	50,985.00	Ap'l 1, "
" 6% S.F.,Sec'd,	1 "	6 "	14,277,000.00	71,385.00	J'ne 1, "
Total Interest on Bonds, ...				505,918.75	

Fixed Charges A. T. & S. F. as Rental:—

			ISSUE.	INTEREST.	COUPON DATE.
Sumner Co. 7s,	4 mos.,	7% on	$194,000.00	$4,526.66	Mar. 1, 1889.
S. K. Gulf Div.,	3 "	5 "	4,336,000.00	72,266.66	Mar. 1, "
S. K. Incomes,	8 "	6 "	1,480,000.00	88,800.00	May 1, "
S. K. of Texas,	4 "	5 "	1,583,000.00	26,383.34	Mar. 1, "
K. C. T. & W. Incomes,	4 "	7 "	200,000.00	4,666.66	Mar. 1, "
K. C. L. & S. 1st Mtg.,	3 "	6 "	2,940,000.00	44,100.00	Ap'l 1, "
Ott. & Bur.,	3 "	6 "	500,000.00	7,500.00	Ap'l 1, "
C. S. & Ft. S. 1st Mtg.,	3 "	7 "	798,000 00	13,965.00	Ap'l 1, "
F. E. & W. V. 1st Mtg.,	3 "	7 "	775,000 00	13,562.50	Ap'l 1, "
M. & McP. 1st Mtg.,	3 "	7 "	713,000.00	12,477.50	Ap'l 1, "
N. M. & S. P. 1st Mtg.,	3 "	7 "	4,425,000.00	77,437.50	Ap'l 1, "
Total Rentals, ...				365,685.82	

Aggregate, ...			871,604.57
Interest on Guarantee Fund Notes, Accrued:—			
2 mos., 6% on		2,800,000.00	28,000.00
Taxes Accrued (Bal. of) for 12 Months to Dec. 31, 1888, payable in January, 1889:—			
Taxes (estimated amount), ...	46,710.43		
So. Kan. Ry., 1883 unpaid, ...	458.15	47,168.58	
Less:—			
Scrip Account, ...	29,396.32		
Tax Certificates.	1,201.65		
O. E. Leonard, Tax Commissioner, . .	734.67		
State Warrants, Colorado, ...	83.30		
Coupon Acct., Taxes, ...	1,080.00	32,495.94	
Balance of amount accrued to Dec. 31, due January, ...			14,672.64
Interest on Bonds, Guarantee Notes, and Taxes Accrued, but not due, ...			914,277.21
Add Sinking Funds: Approx. amount applicable to the period, as accrued, but not yet due and not yet deducted from Funded Debt,			1,060.00
Aggregate, ...			**$915,337.21**

Q. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

GENERAL INCOME ACCOUNT.

For Fiscal Year ending Dec. 31, 1888.

EARNINGS.			
Traffic: —			
Freight,		$10,194,042.93	
Passenger,		4,335,642.92	
U. S. Mails,		423,123.63	
Express,		463,063.94	
Miscellaneous,		197,039.83	
GROSS EARNINGS FROM OPERATIONS,			$15,612,913.25
OPERATING AND GENERAL EXPENSES, 66.5%.			10,387,815.10
NET EARNINGS, 33.5%,			5,225,098.15
(1) Add — RECEIPTS; for Interest on Bonds of Railroad Companies which are owned by A., T. & S. F. R.R. Co., and used as Collateral on "A., T. & S. F. R.R. Co.'s Collateral Trust 5% Bonds,"		621,690.00	
From; Rental of Plant, viz.:			
Rolling Stock,	216,393.78		
Track,	68,235.20	284,628.98	906,318.98
Carried forward,			$6,131,417.13

Q. General Account, Dec. 31, 1888, continued.

Brought forward,			$6,131,417.13
(2) DIRECT FIXED CHARGES.			
Interest on Bonds:—			
(A., T. & S. F. Issues),	2,568,565.05		
Less Int. Land Grant Bonds provided for by receipts from Land Grant Trustees,	168,805.00	2,399,760.05	
Interest on Guarantee Notes,		11,300.83	
Rentals:			
Leased Roads of System (Interest on their Bonds),		1,588,641.06	
Taxes,		639,346.75	
Sinking Fund Requirements:			
Paid,	328,665.25		
Accrued,	1,060.00	329,725.25	
Total Fixed Charges,			4,968,773.94
Total Profit of the Railroad,			1,162,643.19
DEDUCT SUNDRY CONTRACT CHARGES, viz:—			
Payment to St. Louis & San Francisco Ry Co. under agreement of Oct. 5, 1886,		420,016.88	
Rebate of 10% allowed to C., K. & W. R.R. Co. on Earnings from Interchanged Business,		69,142.95	
		489,159.83	
Deduct: 1 Year's Interest on Sonora Ry, Ist Mtg. Bonds, Paid,		283,500.00	772,659.83
Balance,			389,983.36
Add—(1) RECEIPTS FROM OTHER SOURCES:—			
Income from Investments,	Cr. 139,826.17		
Sundry Profits, Less Debits, Net,	Cr. 139,093.20		
General Interest and Discount, Net,	Cr. 438,210.31		717,129.68
Profit of the Company,			1,107,113.04
CHARGES FOR DIVIDENDS, applicable to the period:			
No. 35, Payable May 15,	1,125,000.00		
No. 36, " Aug. 15,	1,125,000.00		
No. 37, " Nov. 15,	375,000.00		2,625,000.00
Deficiency for the 12 months to Dec. 31, 1888,			1,517,886.96
Surplus Dec. 31, 1887,		7,888,620.77	
(3) Add Credit Balance of Sundry Profit and Loss items, applicable to period prior to Jan. 1, 1888,		64,817.34	
Total Surplus Credit to Dec. 31, 1887,			7,953,438.11
NET SURPLUS, Dec. 31, 1888,			**$6,435,551.15**
Net Surplus, Dec. 31, 1888, as above,			$6,435,551.15
Add—SUNDRY SURPLUS ACCOUNTS FOR SPECIFIC PURPOSES, namely:—			
Renewal and Improvement Fund:			
Whole amt. applicable, Cr.,	500,000.00		
Charged in to Dec. 31, 1888, Dr.,	376,310.46	123,689.54	
Fire Insurance Fund,		32,253.07	
Sinking Fund Account 5% Bonds,		12,636.78	
Carried forward,		$168,579.39	$6,435,551.15

Q. General Account, Dec. 31, 1888, continued.

Brought forward, ...		$168,579.39	$6,435,551.15
CANCELLED BOND ACCOUNTS:			
Land Grant Mtg. Bonds, . . .	704 000.00		
Land Inc. 8% " . . .	480.000.00		
Five per cent. " . . .	178,000.00		
Sinking Fund, 5%, " . . .	299,000.00		
4½% S. F., " . . .	618,000.00		
6% S. F., Secured, " . . .	723,000.00		
Suspense Cancelled Bond Account (5's), ...	67,000.00	3,069,000.00	
CALLED BOND ACCOUNT (Sumner Co. R.R.), ...		9,900.00	
RATON COAL SINKING FUND ACCOUNT, ...		16,009,44	
CONSTRUCTION SURPLUS:—			
(4) As detailed in statement accompanying, illustrating Profits and Losses in Construction of Auxiliary Properties:			
Total Deficits, ...	1,076,689.08		
Total Credits, ...	2,445,105.59		
Net Credit, ...		1,368,416.51	
TOTAL SPECIAL SURPLUS ACCOUNTS, ...			4,631,905.34
GENERAL SURPLUS, DEC. 31, 1888,			**$11,067,456.49**

Q—1. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE R.R. CO.

RECEIPTS FROM OTHER SOURCES.

For Year ending Dec. 31, 1888.

Income from Investments:

Scandinavian Coal Co., Div'd on Stock, 2 years to Dec. 31, 1888, ...	$3,000.00	
San Pedro Coal & Coke Co., div'd, . . .	2,400.00	
Union Depot Co., Kansas City, div'd, .	20,000.00	
A., T. & S. F. 6% S. F. Secured Bonds Int.,	1,015,67	
A., T. & S. F. 5% Bonds Int., ...	6,200.00	
Trinidad Coal & Coking Co. Bonds Int., .	6,000.00	
A. & P. R.R. Co. 4% Bonds Int., . . .	14,840.00	
A. & P. R.R. Co. 2d Mortgage Bonds Int.,	25,267.50	
Kansas City Belt Ry. Co. Bonds Int., . .	32,625.00	
California Southern R.R. Co. Bonds Int.,	750.00	
Prescott & Ar. Cent. Ry. Co. Int., . . .	2,880.00	
Aztec Land & Cattle Co. Bonds Int., . .	4,800.00	
Rush & Grant Co. Funding Bonds Int.,	132.00	
Topeka Equipment Co. Int., ...	15,300.00	
A., T. & S. F. R.R. Co. Stock owned, div'd,	4,616.00	
Total Income from Investments,		**$139,826.17**

ALSO:

Credits. By charges against Companies whose bonds are used as collateral to A., T. & S. F 5% Bonds, issued therefor:—

	Mos.	%		
C., S. F. & C. Ry. Co., Pekin Division $733,000	12	6, . .	$43,980.00	
Cal. Cent. Ry. Co., on $6,457,000	12	6, . .	387,420.00	
Redondo Beach Ry Co., $270,000	7	6, . .	9,450.00	
St. L. K. C. & C. R.R. Co., $1,381,000.00	11	6, . .	75,955.00	
St. J. St. L. & S. F. Ry. Co., $1,907,000.00	11	6, . .	104,885.00	
Total Credits from Interest on Bonds Owned,				**$621,690.00**

Sundry Profits:

Land Department (S. K. Ry.) . . . . Receipts (Net), ...	$3,125.95
Profit on $2,800,000.00 A. & P. R.R. Co. 2ds acquired at 75 to be delivered at 90,	420,000.00
Premium on sale P. & A. V. R.R. Co. Bonds,	22,053.75
Profit on A., T. & S. F. 6% Bonds purchsd.	8,823.75
Profit to A., T. & S. F. R.R. Co. of difference between par at which bonds of St. J., St. L. & S. F. Ry. Co. were entered in the account and purchase price 87½, ...	87,218.75
Carried forward, ...	$541,222.20

“Q”—1. General Account, Dec. 31, 1888, continued.

Brought forward,	$541,222.20	
Profit on sale of Securities received under our subscription, Cir. 59,	5,767.82	
Premium on Kansas City Belt Ry. Co. Bonds sold,	26,250.00	
Interest on A., T. & S. F. R.R. Co. in Chicago Bonds sold,	6,250.00	
Profits from Sundry Town Companies,	7,208.28	
Profit and Int. on Scrip and Tax C. & Fs.,	6,226.03	
Profit on Road Taxes in 1888,	3,994.99	
Profit on acct. St. Jos. & St. Louis R.R. Co. Stock purchased,	41,260 00	
Nominal value for book entry of Sundry Capital Stocks, 18 lots at $1 00, 2 lots at $2.00,	22.00	
Total Credit,		$638,201.32
Deduct:		
Commission on sale Capital Stock,	$26,862.50	
Discount on 6% A., T. & S. F. and Coll. Tr. 5% Bonds sold Syndicate Feb., Mar., & April, 1888,	107,600.00	
Discount on $934,000.00 A., T. & S. F. 5s, issued against same amount St. J., St. L. & S. F. Ry. Co. Bonds received for St. Jos. & St. Louis R.R. Co. Bonds,	116,750.00	
Discount on A., T. & S. F. Coll. Trust 5% Bonds sold July, Aug., & Sept., 1888,	235,125.00	
L., T. & S. W. Ry. Co., Loss in Operating, 1887,	12,770.62	499,108.12
NET CREDIT,		**$139,093.20**
GENERAL INTEREST AND DISCOUNT (NET):		
Interest on Sundry Notes and Advances,	$20,771.96	
“ “ Bank Balances,	24,952.81	
“ “ A. & P. R.R. Co. Loans,	482,223.54	
“ “ A. & P. R.R. Co. Pymts. Acct. Locos.,	4,415.77	
“ “ Advances to C., S. F. & C. Ry. Co.,	98,899.87	
“ “ “ “ A., T. & S. F. in Chicago.	76,279.21	
“ “ “ “ St. L., K. C. & C. R.R. Co.,	60,797.05	
“ “ “ “ L., T. & S. W. Ry. Co.,	2,825.63	
“ “ “ “ M., A. & B. Ry. Co.,	459.33	
“ “ “ “ Canon City, Coal & Coke Co.,	21,976.80	
“ “ San Pedro C. & C. Co.,	4,761.58	
“ “ Raton Coal & C. Co.,	5,679.75	
“ “ Cher. & Pitt. C. & M. Co.,	13,880.20	
“ “ Trinidad Coal & C. Co.,	1,064.69	
“ “ Subscription acct. Cir. 60,	708.05	$819,696.24
LESS DEBITS:		
Int. on Sundry Notes & Loans,	257,134.36	
Commission on Guarantee Fund Notes,	70,000.00	
Exchange, etc., on Sterling Loans,	31,264.40	
“ on Florins,	458.58	
Int. on Advances, acct. Santa Fé, El. & Dock Co.,	2,561.67	
Int. on Deferred Payments for Cars,	16,772.87	
Int. on Cost Ark. Valley Elevator Stock,	1,218.75	
Sundry Balances,	2,075.30	381,485.93
NET CREDIT, GEN'L INT., DEC. 31,		**$438,210.31**

Q—2. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

MEMO. OF DIRECT FIXED CHARGES.

INCLUDED IN INCOME ACCOUNT HEREIN.

TO BE PROVIDED FOR OUT OF OPERATIONS FOR YEAR TO DEC. 31, 1888.

Interest on Bonds, A. T. & S. F. Issues (net only):				
First Mortgage,		$492,870.00		
Consol. Mortgage,		7,595.00		
Five Per Cents,		48,275.00		
Sinking Fund Fives,		173,433.34		
Four and one-half Per Cents,		206,809.75		
Six Per Cent. Sinking Fund, Sec'd.,		855,001.18		
Collateral Trust Fives,		615,775.78		2,399,760.05
(Land Grant Trust's Int. $168,805.00. Provided for by Land Grant Trustees, Receipts from Land Sales, and not therefore included here.)				
Interest on Guarantee Notes:				
6 % on $2,800,000, issued to Dec. 31,		28,000.00		
Less Accrued Interest returned at sale,		16,699.17		11,300.83
Rentals: Interest on Bonds of Leased Roads operated as Part of the System.				
Kansas City, Law. & So. 1st Mg.,		176,400.00		
So. Kansas & Western 1st Mg.,		114,240.00		
Sumner County 1st Mg.,		14,000.00		
Ottawa & Bur. 1st Mg.,		30,000.00		
So. Kansas Gulf Div. 1st Mg.,		216,800.00		
So. Kansas Incomes,		88,800.00		
So. Kansas of Texas 1st Mg.,		79,150.00	719,390.00	
C. S. & Ft. S. 1st Mg.,		55,860.00		
F. E. & W. V. 1st Mg.,		54,250.00		
K. C. E. & S. 1st Mg.,		37,240.00		
K. C. T. & W. 1st Mg.,		59,780.00		
K. C. T. & W. Incomes,		14,000.00		
M. & McP. 1st Mg.,		49,910.00		
N. M. & So. P. 1st Mg.,		309,750.00		
P. & A. V. 1st Mg.,		259,621.06		
W. & So. W. 1st Mg.,		28,840.00	869,251.06	1,588,641.06
Taxes: For Twelve months,				639,346.75
Sinking Fund Requirements:				
So. Kan. & W., Nov. 1,	$29,700.00			
Fives, April 1,	17,125.00			
Fives, Oct. 1,	17,125.00			
S. Fund 5s, Sept. 1,	32,875.25			
Four & ½s, Oct. 1.	78,000.00			
Sixes, Dec. 24,	145,000.00			
Sumner Co., Aug. 31,	9,900.00			
Total for 12 mos.,	$329,725.25			
For 12 months, say:				
Paid,			328,665.25	
Accrued, but not Due,			1,060.00	329,725.25
Aggregate Direct Fixed Charges for Year, included in Income Account,				**$4,968,773.94**

Q—3. GENERAL ACCOUNT, DEC. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

SUNDRY ACCOUNTS

LIKELY TO BE CLOSED INTO PROFIT AND LOSS AS AFFECTING RESULT OF OPERATIONS PRIOR TO JAN. 1, 1888.

DR. (LOSSES.)

H. D. Dutcher, N. G.,		$20.40	
Union Pac. R.R. Co., Old Coke Pool,		28,797.64	
Suspense Account,		143.65	
Suspended Pay Check Account,		4.05	
New Mexican Govt. Claim (Doubtful),		744.67	
Suspense Rolls, N. G.,		80.29	
Merchants' & Drovers' Bank, Caldwell, Old Balance,		1,336.90	
Lord & Williams, Old Balance,		656.51	
Seed Wheat Acct. 1880, N. G.,		5,392.96	
Billings & Skene Notes, No Good,		4,944.29	
Johnson Bros. & Service-Prot. Checks,		320.54	
W. B. Lee, "		252.50	
Rice County Bank, "		1,784.13	
S. Martonis, Pay Check Item,		30.45	
Meredith & Ailman, Old Silver City Bank Balance,		2,428.31	
Masten Bank, Kan. Cy. Bank, Balance,		2.90	
N. Wilkies Bank, Douglas, Balance,		331.97	
Uniform Account, Spring of 1887,		70.99	
Note, A. D. Wheeler, Wichita, N. G.,		187.50	
San Pedro & Canon Del Aqua Co. Frt.,		124.96	
J. Edward, N. G.,		111.48	
Pottowatomie Lands Acct.,		23,685.20	
Payments for Coupons (Bal.) M. A. & B. Ry. Co., Def. in Operations prior to Jan. 1, 1888,		281.16	
TOTAL AS LOSSES,			71,733.45

CR. (PROFITS.)

German Natl. Bank, Denver, Old Acct.,		14.30	
J. H. Fairbanks, Old Acct.,		30.10	
J. Conway, Old Acct.,		26.54	
German Natl. Bank, Newton, Old Acct.,		28.27	
Uniform Acct., Fall 1887, Balance,		361.15	
Uniform Acct., Spring 1888, Balance,		279.78	
A. L. Anderson, Balance,		11.05	
A., T. & S. F. R.R. Co., Lessees D. & R. G. Ry., Old Acct.,		70.53	
New Mex. & Ariz. R.R. Interest Acct., representing interest earned on advances to N. M. & A. R.R.:			
Whole credit,	731,344.65		
Less So. P. Ry.,	595,615.58	135,729.07	
TOTAL AS PROFITS,			136,550.79
BALANCE NET PROFITS, AND IN THIS ACCOUNTING ADDED TO "SURPLUS OF DECEMBER 31, 1887,"			**$64,817.34**

Q—4. General Account, Dec. 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

LIABILITIES.

SURPLUS CREDITS FOR SPECIFIC PURPOSES.

CONSTRUCTION ACCOUNTS.

		Dr.	*Cr.*
Cal. Central R'y: Construction, . .			$806,835.95
Chicago, Kan. & West'n R.R. Co., .			823,586.59
Denv. & Santa Fe R'y: Constr'n, Dr.	$613,518.71		
A. S. Johnson, Den. R.E. Sales, . Cr.	179,807.57	433,711.14	
Elk. & Chaut. R.R., Const. Surplus, ...			31,389.15
Flor., Eldorado & W. Val. R.R.:— Construction Deficit, ...		53,560.71	
Leav. North'n & South'n R'y:— Construction, ...		246,537.58	
Man., Alma & Burl. R'y, Constr'n, ...		9,431.49	
New Mex'n R.R., Routes 5, 10, 14, ...			84,847.48
Pueblo & Arkansas Valley R.R.:— Cons. Clelland Ext., ...		28,872.77	
Rio G., Mex. & Pacific R.R.: Const., ...			393,600.17
Rio Grande & El Paso R.R.:— Const., ...		31,471.87	
So. Kansas & Panhandle R.R. Co., ...		273,103.52	
The So. Kansas R'y Co. of Texas, ...			304 846.25
Total Debits, ...		1,076,689.08	
Total Credits, ...			2,445,105.59
Balance Surplus, Net Credit,			**$1,368,416.51**

KANSAS CITY, TOPEKA & WESTERN RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction,	$3,646,011.97	
Permanent investment in The Southern Kansas Railway, represented by Capital Stock and Scrip of that Company at par,	3,743,447.18	
* The Kansas City Belt Railway Co. Stock,	50,000.00	$7,439,459.15

Liabilities.

Capital Stock,	$3,500,000.00	
First Mortgage Bonds,	854,000.00	
Second Mortgage Bonds,	795,000.00	
Income Bonds,	200,000.00	
Six per Cent. Bonds,	1,523,800.00	
Atchison, Topeka & Santa Fé R.R. Co.,	180,202.19	
The Kansas City Belt Railway Co.,	1,937.71	
Income Account to Dec. 31, 1888,	384,519.25	7,439,459.15

INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

Debits.

Twelve months' Interest on First Mortgage Bonds,	$59,780.00	
Twelve months' Interest on Second Mortgage Bonds,	47,700.00	
Twelve months' Interest on Income Bonds,	14,000.00	
Twelve months' Interest on Six per Cent. Bonds,	91,428.00	$212,908.00

Credits.

Balance, Dec. 31, 1887,	$384,519.25	
Atchison, Topeka & Santa Fé R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,	212,908.00	597,427.25
Balance to Cr. Dec. 31, 1888,		$384,519.25

OPERATING ACCOUNT AND CURRENT FISCAL AFFAIRS embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887,	66.32
" Dec. 31, 1888,	66.32

---

* See list of Stocks, Auxiliary Companies, page 43.

LEAVENWORTH, NORTHERN & SOUTHERN RAILWAY CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.		
Construction,		$1,795,600.00
Liabilities.		
Capital Stock,	$641,600.00	
First Mortgage Bonds,	646,000.00	
Second Mortgage Bonds,	508,000.00	1,795,600.00

INCOME ACCOUNT.

For Year ending December 31, 1888.

Debits.		
Twelve months' Interest on Bonds:		
First Mortgage Bonds,	$38,760.00	
Second Mortgage Bonds,	30,480.00	$69,240.00
Credits.		
A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,		69,240.00

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887,	46.19
" Dec. 31, 1888,	46.19

KANSAS CITY, EMPORIA & SOUTHERN RAILWAY CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction,	$1,742,759.78	
Income Account to Dec. 31, 1888,	20,937.88	$1,763,697.66

Liabilities.

Capital Stock,	$838,100.00	
K. C., E. & So. R.R. Co. First Mortgage Bonds,	532,000.00	
E. & C. R.R. Co. First Mortgage Bonds,	142,000.00	
K. C., E. & So. R'y Co. Second Mortgage Bonds,	144,000.00	
K. C., E. & So. R'y Co., Howard Extension, First Mortgage Bonds,	100,000.00	
Atchison, Topeka & Santa Fé R.R. Co.,	5,912.23	1,762,012.23

INCOME ACCOUNT.

For Year ending December 31, 1888.

Debits.

Balance to Dec. 31, 1887,	$20,937.88	
Twelve months' Interest on K. C., E. & So. R.R. Co. First Mortgage Bonds,	37,240.00	
Twelve months' Interest on E. & C. R.R. Co. First Mortgage Bonds,	9,940.00	
Twelve months' Interest on K. C., E. & So. R'y Co. Second Mortgage Bonds,	8,640.00	
Twelve months' Interest on K. C., E. & So. R'y Co., Howard Extension, First Mortgage Bonds,	6,000.00	$82,757.88

Credits.

A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,		61,820.00
Balance to Dr. Dec. 31, 1888,		$20,937.88

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887,	84.27
Dec. 31, 1888,	84.27

FLORENCE, ELDORADO & WALNUT VALLEY RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888

Assets.

Construction,	$1,709,866.88	
A., T. & S. F. R.R. Co. Accrued Interest Account.	13,562 50	
Income Account to Dec. 31, 1888,	46,510.77	$1,769,940.15

Liabilities.

Capital Stock,	$854,000.00	
First Mortgage Bonds,	775,000.00	
Atchison, Topeka & Santa Fé R.R. Co.,	127,377.65	
Accrued Interest on Bonds,	13 562.50	1,769,940.15

INCOME ACCOUNT.

For year ending Dedember 31, 1888.

Debits.

Balance to Dec. 31, 1888,	$46,510.77	
Twelve months' Interest on First Mortgage Bonds,	54.250.00	$100,760.77

Credits.

A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,		54,250.00
Balance to Dr. Dec. 31, 1888,		$46,510.77

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage,	Dec. 31, 1887,	72.73
"	Dec. 31, 1888,	72.73

MARION & McPHERSON RAILWAY CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.		
Construction, ...	$2,789,583.38	
A., T. & S. F. R.R. Co. Accrued Interest on Bonds	12,447.50	$2,802,030.38
Liabilities.		
Capital Stock, ...	$1,539,300.00	
M. & McP. R.R. Co. First Mortgage Bonds, ...	713,000.00	
M. & McP. Ext. R.R. Co. First Mortgage Bonds, .	130,000.00	
M. & McP. R'y Co. Second Mortgage Bonds, . .	385,000.00	
Atchison, Topeka & Santa Fé R.R. Co., ...	22,283.38	
Accrued Interest on Bonds, ...	12,447.50	2,802,030.88

INCOME ACCOUNT.

For year ending December 31, 1888.

Debits.		
Twelve months' Interest on M. & McP. R.R. Co. First Mortgage Bonds, ...	$49,910.00	
Twelve months' Interest on M. & McP. Ext. R.R. Co. First Mortgage Bonds, ...	7,800.00	
Twelve months' Interest on M. & McP. R'y Co. Second Mortgage Bonds, ...	23,100.00	$80,810.00
Credits.		
A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental, ...		80,810.00

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887, . . .	98.61
" Dec. 31, 1888, . . .	98.61

WICHITA & SOUTH-WESTERN RAILWAY CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction, ...	$3,889,242.68	
Income Account to Dec. 31, 1888, ...	4,995.01	$3,894,237.69

Liabilities.

Capital Stock, ...	$2,125,000.00	
Wichita & South-western R.R. Co. First Mortgage Bonds, ...	412,000.00	
Cowley, Sumner & Fort Smith R.R. Co. First Mortgage Bonds, ...	798,000.00	
Harvey County R.R. Co. First Mortgage Bonds, . .	195,000.00	
Wichita & South-western R'y Co. Second Mortgage Bonds, ...	265,000.00	
Atchison, Topeka & Santa Fé R.R. Co., ...	99,237.69	3,894,237.69

INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

Debits.

Balance to Dec. 31, 1887, ...	$4,995.01	
Twelve months' Interest on Wichita & South-western R.R. Co. Bonds, ...	28,840.00	
Twelve months' Interest on Cowley, Sumner & Fort Smith R.R. Co. Bonds, ...	55,860.00	
Twelve months' Interest on Harvey County R.R. Co. Bonds, ...	11,700.00	
Twelve months' Interest on Wichita & South-western R'y Co. Second Mortgage Bonds, ...	15,900.00	$117,295.01

Credits.

A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental, ...	112,300.00
Balance to Dr. Dec. 31, 1888, ...	$4,995.01

OPERATING ACCOUNT AND CURRENT FISCAL AFFAIRS embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887, . . .	130.72
" Dec. 31, 1888, . . .	130.72

THE PUEBLO & ARKANSAS VALLEY RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction,	$10,586,052.09	
Various Coal Companies, etc:		
*Trinidad Coal and Coking Company Stock, 1,625 shares,	162,500.00	
Trinidad Coal and Coking Company, Expenditure Account,	69,365,75	
*Cañon City Coal Company Stock, 8,500 shares,	464,125.00	
Cañon City Coal Company, Expenditure Account,	512,856.26	
Gunnison Anthracite Coal Lands,	55,037.27	
Atchison, Topeka & Santa Fé R.R. Co.,	35,925.58	
Lands at Cañon City,	4,329.72	
" Right of Way in Fremont County, Col.,	1,455.00	$11,891,646.67

Liabilities.

Capital Stock,	$5,616,200.00	
First Mortgage Bonds,	3,715,000.00	
Second Mortgage Bonds,	2,270,000.00	
Income Account Dec. 31, 1888,	290,446,67	11,891,646.67

INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

Debits.

Twelve months' Interest on First Mortgage Bonds,	$260,050.00	
Twelve months' Interest on Second Mortgage Bonds,	136,200.00	$396,250.00

Credits.

Balance to Dec. 31, 1887,	$290,446.67	
A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,	396,250.00	686,696.67
Balance to Cr. Dec. 31, 1888,		$290,446.67

OPERATING ACCOUNT AND CURRENT FISCAL AFFAIRS embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887,	292.44
" Dec. 31, 1888,	294.16

*See list of Stocks, Auxiliary Companies page 43.

THE DENVER & SANTA FE RAILWAY CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction, ...	$4,589,000.00	
Rolling Stock, ...	17,000.00	$4,606,000.00

Liabilities.

Capital Stock, ...	$1,500,000.00	
First Mortgage Bonds, ...	3,106,000.00	4,606,000.00

INCOME ACCOUNT.

For Year ending December 31, 1888.

Debits.

Twelve months' Interest on First Mortgage Bonds,	$186,360.00

Credits.

A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental, ...	186,360.00

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887. . .	124.27
" Dec. 31, 1888, . .	124.27

THE NEW MEXICO & SOUTHERN PACIFIC RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction,	$17,741,326.86	
Rolling Stock,	530,924.21	
* Las Vegas Hot Springs Co. Stock,	184,950.00	
Las Vegas Hot Springs Co. Expenditure Account,	746,709.21	
Coal Lands, New Mexico,	1,694.91	
A., T. & S. F. R.R. Co. Accrued Interest Account,	77,437.50	$19,283,042.69

Liabilities.

Capital Stock,	$9,302,000.00	
First Mortgage Bonds,	5,610,000.00	
Second Mortgage Bonds,	3,692,000.00	
Atchison, Topeka & Santa Fé R.R. Co.,	373,577.43	
Accrued Interest on Bonds,	77,437.50	
Income Account,	228,027.76	19,283,042.69

INCOME ACCOUNT.

For Year ending December 31, 1888.

Debits

Twelve months' Interest on First Mortgage Bonds,	$392,700.00	
Twelve months' Interest on Second Mortgage Bonds,	221,520.00	$614,220.00

Credits.

Balance to Dec. 31, 1887,	$228,027.76	
A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,	614,220.00	842,247.76
Balance to Cr. Dec. 31, 1888,		$228,027.76

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887,	372.09
" Dec. 31, 1888,	372.09

---

* See list of Stocks, Auxiliary Companies, page 43.

THE RIO GRANDE, MEXICO & PACIFIC RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction, ...	$10,896,428.72	
Rolling Stock, ...	691,571.28	$11,588,000.00

Liabilities.

Capital Stock, ...	$6,938,000.00	
First Mortgage Bonds, ...	4,650,000.00	11,588,000.00

INCOME ACCOUNT.

For Year ending December 31, 1888.

Debits.

Twelve months' Interest on First Mortgage Bonds,	$279,000.00

Credits.

A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental, ...	279,000.00

Operating Account and Current Fiscal Affairs embraced in "Genera Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887, . . .	186.08
" Dec. 31, 1888, . . .	186.08

SILVER CITY, DEMING & PACIFIC RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction,	$1,339,908.40	
Rolling Stock,	121,084.49	$1,460,992.89

Liabilities.

Capital Stock,	$708,000.00	
First Mortgage Bonds,	708,000.00	
Atchison, Topeka & Santa Fé R.R. Co.,	16,465.76	
Income Account to Dec. 31, 1888,	28,527.13	1,460,993.89

INCOME ACCOUNT.

For year ending December 31, 1888.

Debits.

Twelve months' Interest on First Mortgage Bonds,		$42,480.00

Credits.

Balance to Dec. 31, 1887,	$28,527.13	
A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,	42,480.00	71,007.13
Balance to Cr., Dec. 31, 1888,		$28,527.13

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887,	48.29
" Dec. 31, 1888,	48.29

RIO GRANDE & EL PASO RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction, ...	$617,790.82	
Rolling Stock, ...	82,209.18	$700,000.00

Liabilities.

Capital Stock, ...	$200,000.00	
First Mortgage Bonds, ...	500,000.00	700,000.00

INCOME ACCOUNT.

For year ending December 31, 1888.

Debits.

Twelve months' Interest on First Mortgage Bonds, . .	$30,000.00

Credits.

A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental, ...	30,000.00

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887, . . .	20.15
" Dec. 31, 1888, . . .	20.15

THE NEW MEXICAN RAILROAD CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

Construction, ...		$1,224,457.15

Liabilities.

Capital Stock (10 per cent. paid in), ...	$145,580.00	
First Mortgage Bonds, ...	1,070,000.00	
Atchison, Topeka & Santa Fé R.R. Co., ...	8,877.15	1,224,457.15

INCOME ACCOUNT.

For Year ending December 31, 1888.

Debits.

Twelve months' Interest on First Mortgage Bonds,	$64,200.00

Credits.

A., T. & S. F. R.R. Co. amount of Interest on Bonds as per contra, as and for Rental, ...	64,200.00

Operating Account and Current Fiscal Affairs embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887, . . .	68.11
" Dec. 31, 1888, . . .	68.11

THE SOUTHERN KANSAS RAILWAY COMPANY.

GENERAL ACCOUNT, DEC. 31, 1888.

CAPITAL.

Assets.

Cost of Property and Equipment.		
Dec. 31, 1887,	$19,724,246.89	
Additions in 1888,	541,709.00	
* The So. Kansas Ry. Co. of Texas, 6,045 Shs. Cap. Stock,	395,775.00	$20,661,730.89

Liabilities.

Capital Stock:				
Issued (including $47.18 Scrip),			$5,059,847.18	
To be issued,			16,452.82	$5,076,300.00
Funded Debt-Bonds:				
Kansas City, Law. & So. R.R. Co.,	1st Mtg.	6%	$2,940,000.00	
So. Kan. & Western R.R. Co.,	“ “	7	1,632,000.00	
Sumner County R.R. Co.,	“ “	“	194,000.00	
Ottawa & Burlington R.R.Co.,	“ “	6	500,000.00	
The So. Kansas Ry. Co. Gulf Div.,	“ “	5	4,336,000.00	
The So. Kansas Ry. Co. Income Bonds,		6	1,480,000.00	
The So. Kansas Ry. Co. Girard Ext.,	1st Mtg.	“	135,000.00	
The So. Kansas Ry. Co. Harper & Western Div.,	“ “	“	1,378,000.00	
Kansas Southern Ry. Co.,	“ “	“	594,000.00	
Kansas City & E. Div.,	2d “	“	301,000.00	
Kansas City & E. R.R. Co.,	1st “	“	1,109,000.00	
Kansas City & O. R.R. Co.,	“ “	“	350,000.00	14,949,000.00
				$20,025,300.00

RESOURCES AND OBLIGATIONS.

Securities Owned:		
*Kansas City Union Depot Co. Stock (210 Shares), ...	33,629.23	
*Cherokee & Pittsburgh Coal & M. Co. Stock (2,000 Shares), ...	200,000.00	
*Hunnewell Town Co. Stock (250 shs.),	1.00	
Kansas City, L. & So. R.R. Co. Stock Scrip, ...	103,51	
	$233,733.74	
Advances:		
Cherokee & Pittsburgh Coal & M. Co.,	200,000.00	433,733.74
A. T. & S. F. R.R. Co. Accrued Int. on Bonds (as Rental),		217,193.33
		$21,312,657.96

Auxiliaries:		
Atchison, Topeka & S. F. R.R. Co., For Construction, Cr.,	$239,503.19	
" " Dr.,	137,602.06	
Net Cr.,	$101,901.13	
For Current Acct., Cr.,	17,475.80	119,376.93
Bond Interest:		
Accrued, but not due, ...		217,193.33

SURPLUS.

Balance of Income Account, Dec. 31, '87,	$649,787.70	
Additions in 1888, ...	38,000.00	
Special Surplus Cancelled Bonds Acct.,	254,000.00	
Suspense Cancelled Bond Acct., . . .	9,000.00	950,787.70
		$21,312,657.96

Leased Property:

Income Account and Current Fiscal Affairs embraced in "General Account" of A., T. & S. F. R.R. Co.

Mileage, Dec. 31, 1887, . . .	935.50
" Dec. 31, 1888, . . .	941.93

---

* See Statement of Securities Owned by Auxiliary Companies, page 43.

THE SOUTHERN KANSAS RAILWAY CO. OF TEXAS.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.		
Construction,	$2,187,500.00	
Atchison, Topeka & Santa Fé R.R. Co. Accrued Interest Account,	26,383.33	$2,213,883.33
Liabilities.		
Capital Stock,	$604,500.00	
First Mortgage Bonds,	1,583,000.00	
Accrued Interest on Bonds,	26,383.33	2,213,883.33

INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

Debits.	
Twelve months' Interest on First Mortgage Bonds,	$79,150.00
Credits.	
Atchison, Topeka & Santa Fé R.R. Co. amount of Interest on Bonds as per contra, as and for Rental,	79,150.00

OPERATING ACCOUNT AND CURRENT FISCAL AFFAIRS embraced in "General Account" A., T. & S. F. R.R. Co.

Mileage of this Road included in that shown upon General Account of The Southern Kansas Railway Company.

ATCHISON, TOPEKA & SANTA FE RAILROAD CO.

ANALYSIS OF GENERAL SURPLUS ACCOUNT, DECEMBER 31, 1888.

PERMANENT INVESTMENT in Construction and Equipment of Property in Excess of Bonds outstanding,	$661,967.50		
Excess Value of Equipment Leases over Obligations therefor outstanding,	67,686.27	$729,653.77	
*AVAILABLE INVESTMENTS, Bonds and Stocks in Treasury, Par $6,539,946.62, Cost,		4,000,936.71	
MATERIAL AND FUEL on Hand,		1,424,756.21	
SUNDRY ACCOUNTS, including Advances to Auxiliaries,		4,912,109.80	
Total as Applied,			**$11,067,456.49**

CONTRA.

GENERAL INCOME SURPLUS,	$6,435,551.15	
CANCELLED BOND ACCOUNTS,	3,069,000.00	
CALLED BOND ACCOUNTS,	9,900.00	
SUNDRY SINKING FUND ACCOUNTS,	28,646.22	
FIRE INSURANCE FUND,	32,253.07	
RENEWAL & IMPROVEMENT FUND,	123,689.54	
CONSTRUCTION SURPLUS,	1,368,416.51	
Total Surplus,		**$11,067,456.49**

---

*Does not include Securities held Unpledged by Investment Properties owned by Atchison Company, Par $7,764,775.76, Cost $5,887,977.52.

ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY.

LAND DEPARTMENT REPORT.

STATEMENT No. 1.

OPERATIONS FOR THE YEAR.

The sales of land in 1888 were, for cash, 5,436.46 acres for $7,656.92.

During the year there were cancelled and restored to the market 17,189.25 acres, representing $55,117.78 principal.

The cash receipts of the Department were as follows:—

From Sales,	$7,656.92
" Deferred payments,	248,016.05
" Miscellaneous,	343.05
	$256,016.02

The expenditures were as follows:—

Salaries, office expenses, agents, etc.,	$8,835.30
Agents' expenses, advertising, etc.,	511.82
Rebates and other arbitrary expenses,	1,241.72
	$10,588.84
Taxes,	2,841.54
	$13,430.38

The net income of the year—applicable to the payment of interest and expenses, etc., of the Trust and to the redemption of Land Bonds—was $242,585.64.

STATEMENT No. 2.

OPERATIONS SINCE ORGANIZATION.

The sales of the Department since its organization have been:

For Cash,	1,520,124.23	acres,	$4,838,688.63
On Time,	1,811,709.36	"	7,887,158.47
	3,331,833.59	"	$12,725,847.10

Being an average of $\$3\frac{82}{100}$ per acre.

The cancellation of contracts since the organization of the Department, arising from non-improvement, non-payment, and other causes, has been 414,998.74 acres for $1,909,199.04 of principal and $567,391.42 interest.

The total cash receipts have been:—

From Principal,	$10,134,922.86
" Interest,	1,557,605.31
" Miscellaneous,	36,790.13
	$11,729,318.30

This total cash received has been disbursed as follows:—

Expenses since organization,	$1,646,509.64
Taxes since organization,	1,178,544.61
Paid to Boston Office account Land Bonds and Expenses of Land Trusts (see note),	8,904,264.05
	$11,729,318.30

STATEMENT No. 3.

COMPENDIUM OF WESTERN OFFICE TRIAL BALANCE, DECEMBER 31, 1888.

Debits.

Net Sales,—Principal,	$10,816,648.06
Interest and Miscellaneous,—Net,	1,687,010.91
	$12,503,658.97

Credits.

Expenses of Land Department since organization,	$1,646,509.64
Taxes since organization,	1,178,544.61
Discounts made for improvements,	191,013.65
Discounts for payments in advance,	85,320.42
Unpaid principal of land contracts,	440,182.16
Unpaid interest of land contracts,	57,824.44
Balance paid Boston Office,	8,904,264.05
	$12,503,658.97

Boston, April 15, 1889.

Note:—

To the amount received from the Land Department, namely,		$8,904,264.05
There has been added for miscellaneous receipts, interest, and allowance to the Trustees of the Land Grant to Dec. 31, 1888,		558,702.47
		$9,462,966.52
And there has been paid to the same date:—		
Interest on Land Grant Bonds,	$3,238,075.85	
Interest on Land Income Bonds,	294,318.69	
Expenses, etc., of Land Trusts,	29,413.88	
Land Grant Bonds purchased and cancelled,	1,109,000.00	
Land Income Bonds purchased and cancelled,	480,000.00	
		5,150,808.42
Balance of account Dec. 31, 1888,		$4,312,158.10

Land Department Report, Concluded.

STATEMENT No. 4.

SUMMARY GENERAL CONDITION, DEC. 31, 1888.

The outstanding Land Grant Bonds, Dec. 31, 1888, were

$2,411,500.00

Against this indebtedness there were the following assets:—

Unpaid principal of land contracts,	$440,182.16
Balance of account, Dec. 31, 1888,	4,312,158.10
	$4,752,340.26

Note.—In the general balance sheet of the Atchison Company, the liabilities include the outstanding Land Grant Bonds as above stated, $2,411,500.00, although the Trustees hold collateral securities fully covering the same; but no portion of the above $4,752,340.26 has been included in the assets.

ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY AND SYSTEM-PROPER.

STATEMENT SHOWING THE MILES RUN BY LOCOMOTIVES, AND THE DETAILS OF COST OF REPAIRING AND OPERATING SAME FOR THE YEAR 1888.

Miles run by Freight Engines,	7,728,083
" " Passenger Engines,	4,268,766
" " Switch Engines,	2,225,545
" " Miscellaneous Engines,	420,003
" " Work Engines,	341,253
Total Miles run by Engines,	14,983,650

Waste used, pounds,	209,116$\frac{7}{12}$
Tallow used, pounds,	644
Oil used, pints (lubricating, 1,288,144 pts.).	1,672,414
Coal used, tons,	562,211$\frac{337}{2000}$
Wood used, cords,	15,021$\frac{8}{16}$

Wages of Engineers, Firemen, and Wipers,		$1,159,158.57
Repairs of Locomotives, Labor,	$385,412.52	
" " Material,	285,783.95	671,196.47
Value of Oil and Waste used.		86,750.19
" Miscellaneous Supplies,		58,685.09
" Coal,		1,045,767.36
" Wood,		40,864.36
Total Cost of Labor and Material,		$3,062,422.04

Cost per mile run (in cents) for Oil, Waste, etc.,	.58
" " " " " Miscellaneous Supplies,	.39
" " " " " Fuel,	7.25
Cost per mile run (in cents) for Engineers, Firemen, and Wipers,	7.74
Cost per mile run (in cents) for Locomotive Repairs,	4.48
Total Cost per mile run (in cents),	20.44

Average number of miles to ton of Coal,	26.65
" " " pint of Oil (all kinds),	8.96
" " " pint of Oil (lubricating),	11.63
Cost of Coal per ton,	$1.86
Cost of Wood per cord,	2.72

NOTE.—This includes the cost of running locomotives employed on track and other work which in the operating accounts is charged to the work done.

ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY AND SYSTEM–PROPER.

STATEMENT OF ROLLING STOCK, DECEMBER 31, 1888.

Description.	Owned by		Total.
	A., T. & S. F., R.R. Co.-System Proper.	Topeka Equipment Co.	
Locomotives,	640	18	658
Passenger Cars:—			
Smoking and library,	4	....	4
Dining,	4	....	4
Coaches,	262	3	265
Coach and baggage,	18	3	21
Baggage, mail, and express,	144	8	152
Coach, mail, and baggage,	16	2	18
Chair,	9	...	9
Observation,	10	....	10
Officers,	6	1	7
Pay,	3	....	3
*Emigrant sleeping,	60	....	60
*Pullman drawing-room sleeping(half-interest),	54	....	54
*Pullman buffet sleeping (half-interest),	4	....	4
Fruit, passenger,	13	....	13
Total,	607	17	624
Freight Cars:—			
Fruit, freight,	246	....	246
Refrigerator,	19	....	19
Box,	6,113	211	6,324
Combination,	506	19	525
Stock,	2,822	....	2,822
Flat,	1,664	38	1,702
Coal,	4,477	59	4,536
Way,	226	10	236
Total,	16,073	337	16,410
Other Cars:—			
Water,	4	....	4
Boarding,	2	....	2
Store-room box,	3	....	3
Oil flats,	4	....	4
Pile drivers,	8	....	8
Derrick,	6	....	6
Tie spotter,	1	....	1
Steam shovel and derrick,	1	....	1
Snow flangers,	3	....	3
Total,	32		32

RECAPITULATION.

	Total A., T. & S. F. R.R. Co.-System Proper and Topeka Equip. Co., Dec. 31, 1887.	Additions in 1888.	Total, Dec. 31, 1888.
Locomotives,	550	108	658
Passenger Cars,	527	97	624
Freight "	13,746	2,664	16,410
Sundry "	30	2	32
Total Cars,	14,303	2,763	17,066

NOTE.—The Company is also acquiring under Equipment Leases with the Indianapolis Car & Manufacturing Co. and the St. Charles Car Co., 3,000 Gondola Coal Cars, not included above, (of which 2,246 cars have been received), numbered as follows:—

2,000 A–34 441 to A–38,439, odd numbers inclusive.
500 D–38,441 " D–39,439, " " "
500 A–39,441 " A–40,439, " " "

* Since sold to Pullman Company.

See page 150 for Statement of Rolling Stock owned by Auxiliary Companies.

ATCHISON, TOPEKA AND SANTA FE R.R. CO. AND SYSTEM—PROPER.

STATEMENT OF GROSS EARNINGS, OPERATING EXPENSES, AND NET EARNINGS FOR THE YEAR 1888.

GROSS EARNINGS.

Sources.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Freight.......	$621,878.88	$670,241.14	$815,726.61	$765,284.11	$797,222 57	$871,285.67	$859,425.75	$892,772.13	$932,852.35	$1,111,595.27	$1,009,094.17	$846,664.28	$10,194,042.93
Passenger.....	374,416.62	332,935.98	343,916.40	351,363.13	375,645 68	387,565.39	378,344.87	332,206.34	385,942.54	355,492.75	358,050.08	359,763.14	4,335,642.92
Mail..........	32,203.77	32,203.77	32,203.77	40,408.23	40,836.05	34,804.00	34,840.74	34,840.74	34,840.74	34,840.74	34,840.74	36,260.34	423,123.63
Express	27,876.22	27,876.22	27,876.22	27,838.24	27,838.24	27,838.24	45,433.80	45,199.26	45,071.36	40,258.84	41,927.60	78,029.70	463,063.94
Miscellaneous.	15,107.10	5,866.19	13,514.67	20,456.25	17,425.78	14,916.33	15,781.09	13,725.98	13,143.17	18,555.29	16,458.85	32,089.13	197,039.83
Total.	$1,071,482.59	$1,069,123.30	$1,233,237.67	$1,205,349.96	$1,258,968.32	$1,336,409.63	$1,333,826.25	$1,318,744.45	$1,411,850.16	$1,560,742.89	$1,460,371.44	$1,352,806.59	$15,612,913.25

ATCHISON, TOPEKA AND SANTA FE R.R. CO. AND SYSTEM—PROPER.

OPERATING AND GENERAL EXPENSES AND NET EARNINGS FOR THE YEAR 1888.

Accounts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Maintenance of Way.													
Repairs of roadway and track..........	$55,772.27	$70,536.40	$97,320.99	$118,165.43	$140,542 12	$122,585.28	$88,688.69	$87,543.55	$90,608.00	$81,937.29	$72,789.38	$65,520.10	$1,092,009.50
Renewal of track....................	17,401.71	55,951.99	97,324.05	144,201 21	27,076.89	30,528 12	12,688.20	35,566.17	51,164 82	47,752.84	16,396.62	47,409.99	583,462.61
Repairs of fences, crossings, etc.......	975.19	1,218 10	2,093.07	5,264.26	5,162.08	4,900.50	3,202.44	1.927.19	1,593.32	1,833.55	2,559.25	1,633.01	32,361.96
Repairs of bridges....................	8,232.59	11,798.90	12,890.15	18,285.53	23,179.43	20,371.98	20,669.52	16,999 83	12,576.59	10.999.43	10,432.05	384.27	166,820.27
Renewals and improvements of bridges.	9,030.38	8,695.65	10,772 60	21,285.58	18,945.73	34,039.03	13,662.74	7,525.08	*Cr.* 2,402.76	5,369.86	2,352.19	23,222.52	152,498.60
Total........................	$91,412.14	$148,201.04	$220,400.86	$307,202.01	$214,906.25	$212,424.91	$138,911.59	$149,561.82	$153,539.97	$147,892.97	$104,529.49	$138,169.89	$2,027,152.94
Maintenance of Buildings.													
Repairs of buildings and shops.........	$9,226.59	$10,245.90	$12,113.82	$15,958.87	$17,955.17	$16,528.42	$11,387.07	$10,081.14	$12,241 92	$16,047.93	$7,549.06	$7,905.37	$147,241.26
Renewals and imp. of buildgs and shops	1,578.48	2,307.97	6,733.33	4,726.74	4,564.25	9,183.94	3,892.65	2,016.81	1,667.64	495.31	842.06	*Cr*24,081.25	13,927.93
Total........................	$10,805.07	$12,553.87	$18,847.15	$20,685.61	$22,519.42	$25,712.36	$15,279.72	$12,097.95	$13,909.56	$16.543.24	$8,391.12	*Cr*16,175.88	$161,169.19
Maintenance of Rolling Stock.													
Repairs and renewals of freight cars	$74,242.45	$71,735.11	$80,684.48	$79,804.59	$78,693.95	$96,590.12	$88,740.74	$106,855.62	$120,484.83	$114,299.42	$68,990.10	$63,021.73	$1,044,143.14
" " passenger "	19,170.38	21,528.05	21,886.15	35,751.22	31,772.25	17,184.52	32,969.45	45,322.22	42,614.45	35,358.55	27,794.43	38,765.46	370,117.13
" " locomotives....	53,173.30	47,280.20	56,431.24	38,108 39	34,632.75	39,962.49	46,806.95	84,372 98	74,881.54	69,415.04	68,958.39	39,917.35	653,940.62
Total........................	$146,586.13	$140,543.36	$159,001.87	$153,664.20	$145,098.95	$153,737.13	$168,517.14	$236,550.82	$237,980.82	$219,073 01	$165,742.92	$141,704.54	$2,068,200.89
Transportation and Traffic Exp's.													
Locomotive service.....................	$74,721.22	$73,335.16	$68,174.05	$78,806.05	$80,073.32	$84,080.52	$81,353.00	$84,788.81	$84,084.00	$89,236.00	$94,213.65	$79,885.14	$972,750 92
Locomotive expenses, fuel.............	97,693.84	80,687.85	82,779.49	84,195.11	89,696.18	90,384.93	88,236.00	79,176.89	81,163.37	100,555.76	109,128.91	96,625.30	1,080,323.63
" " oil, waste, etc.....	22,597.74	21,462.87	22,554.72	22,711.96	23,549.47	26,867.19	26,971 08	29,689.51	27,730.17	27,892.66	25,678.04	31,634.08	309,339.49
Water stations, service and expenses....	7,572.83	8,937.16	9,806.31	10,185.85	9,738.90	11,441.23	14,180.98	9,406.95	9,647.61	10,932.97	10,086 40	11,457.51	123,394.70
Train and car service and expenses.....	86,223.96	73,335 91	77,715 20	79,779.40	82,855.88	85,439 63	86,342.06	87,161.49	89,542.86	97,607.64	89,844 97	92,884.49	1,028,733.49
Car mileage...........................	*Cr.* 31.14	7,752.84	*Cr.* 9,933.56	*Cr.* 9,501,60	*Cr*19,975.04	*Cr*27,093.09	*Cr.* 4,701.11	*Cr*64,037.28	*Cr*13,549.99	*Cr.* 9,383 20	*Cr*29,240.31	*Cr*25,528.24	*Cr.*205,221.72
Loss and damage......................	13,238.31	11,656.38	26,789 99	16,216.64	37,481.37	25,522.50	22,318.41	27,111.49	15,632.43	21,186.61	33,507.91	34,952.76	285,614.80
Telegraph service and expenses........	19,574.28	18,684 36	16,887.86	18,134 64	21,754.94	23,421.17	22,692.36	19,473.70	20,703.45	22,342.50	22,417.83	22,568.16	248,655.25
Station service and expenses........ ...	91,797.32	83,265.99	84,432.26	77,035.96	70,906.16	81,757.99	84,187.29	85,493.08	84,500 57	83,083.91	86,112.99	44,934.66	957,508.18
Traffic, gen'l and divisional super't'd'ce.	26,573 64	27,135.40	28,069.91	30,112 30	29,023.13	29,846.40	30,735 35	28,929.94	29,025.06	27,923.76	26,818.63	25,172.92	339,366.44
Rentals...............................	71.44	*Cr.* 262.32	*Cr.* 208.77	115 35	109.45	5,723.46	962.92	485 41	2,098.11	*Cr.* 1,059.13	962.37	*Cr.* 886.13	8,112.16
Stationery, printing, and tickets........	7,320.06	9,470.51	10,654.27	7,367.96	8,009.64	8,710.49	7,798.28	6,226.09	8,777.87	9 291.82	6,408 81	7,924.88	97,960 68
Advertising...........................	1,215.08	5,698.05	955.71	3,358.27	5,480.93	3,665.40	4,237.90	2,214.81	5,342.29	6,538.05	1,326.50	9,650.20	49,683.19
Foreign agency........................	17,927.07	17,928.54	17,599 89	18,669.44	19,194.33	17,204.01	22,462.34	22,621.21	24,468.16	25,428.35	22,935.60	25,173.00	251,611.94
Miscellaneous.........................	4,212.19	3,658.73	5,567 24	4,534.33	5,873,82	12,824.64	17,432.31	13,300.59	10,738.61	16 276.03	14,411.35	8,508.27	117,338.11
Total........................	$470,707.84	$442,747.43	$441,844.57	$441,721.66	$463,772.48	$479,796 47	$505,209.17	$432,042.69	$479,904.57	$527,853.73	$514,613.65	$464,957 00	$5,665,171.26
General Expenses.													
General offices........................	$23,243.51	$22,953.29	$29,884.18	$29,550 61	$26,638.13	$27,185.50	$25,194.78	$24,938 50	$24,346.20	$21,098.81	$24,008.49	$31,087.67	313,129.67
Legal department.....................	8,139.35	8,640 94	9,942.92	9,545.78	10,729.07	9,662 18	9,651.58	12,719.21	8,713.62	19,726.09	9,804.56	6,958.23	124,233.53
Insurance............................	2,275.00	2,275 00	2,275.00	2,375.00	2,300.00	2,300.00	2,300.00	2,300.00	2,300.00	2,500.00	2,500.00	3,057.62	28,757.62
Total........................	$33,657 86	$33,869.23	$42,102.10	$41,471.39	$39,667.20	$39,147.68	$37,146.36	$39,957 71	$35.359.82	$46,324.90	$36,313.05	$41,103.52	$466,120.82
OPERATING EXPENSES......	$753,169.04	$777,914.93	$882,196.55	$964,744.87	$885,964.30	$910,818.55	$865,063.98	$870,210.99	$920,694.74	$957,687.85	$829,590.23	$769,759.07	10,387,815.10
NET EARNINGS............	$318,313 55	$291,208.37	$351,041.12	$240,605.09	$373,004.02	$425,591.08	$468,762.27	$448,533.46	$491,155.42	$603,055.04	$630,781.21	$583,047.52	$5,225,098.15

ATCHISON, TOPEKA & SANTA FÉ RAILROAD COMPANY AND SYSTEM—PROPER.

COMPARATIVE STATEMENT OF GROSS EARNINGS AND OPERATING EXPENSES, SHOWING THE INCREASE OR DECREASE FOR THE YEARS 1888 AND 1887.

Earnings.	1888.	1887.	Increase.	Decrease.
Freight	$10,194,042.93	$12,248,343.77		$2,054,300.84
Passenger	4,335,642.92	5,136,651.81		801,008.89
Mail	423,123.63	379,937.61	$43,186.02	
Express	463,063.94	365,521.41	97,542.53	
Miscellaneous	197,039.83	330,911.66		133,871.83
Gross Earnings	$15,612,913.25	$18,461,366.26		Net. $2,848,453.01 Per Ct., 15.43

Operating Expenses.	1888.	1887.	Increase.	Decrease.
Repairs of roadway and track	$1,092,009.50	$1,088,881.74	$3,127.76	
Renewal of track	583,462.61	710,219.36		$126,756.75
Repairs of fences, crossings, etc	32,361.96	31,472.07	889.89	
Repairs of bridges	166,820.27	192,920.59		26,100.32
Renewals and improvem'ts of bridges	152,498.60	118,538.92	33,959.68	
Repairs of buildings and shops	147,241.26	178,677.06		31,435.80
Renewals and improvements of buildings and shops	13,927.93	59,110.49		45,182.56
Repairs, renewals, and improvements of freight cars	1,044,143.14	844,483.48	199,659.66	
Repairs, renewals, and improvements of passenger cars	370,117.13	278,408.77	91,708.36	
Repairs, renewals, and improvements of locomotives	653,940.62	495,260.32	158,680.30	
Locomotive service	972,750.92	850,840.73	121,910.19	
Locomotive expenses, fuel	1,080,323.63	1,007,923.49	72,400.14	
" " oil, waste, etc	309,339.49	260,661.23	48,678.26	
Water stations, service and expenses	123,394.70	118,972.00	4,422.70	
Train and Car service and expenses	1,028,733.49	912,148.99	116,584.50	
Car mileage	*Cr.* 205,221.72	129,392.14		334,613.86
Loss and damage	285,614.80	200,153.75	85,461.05	
Telegraph service and expenses	248,655.25	204,872.19	43,783.06	
Station service and expenses	957,508.18	939,877.01	17,631.17	
Traffic, general and divisional superintendence	339,366.44	298,942.13	40,424.31	
Rentals	8,112.16	180.56	7,931.60	
Stationery, printing, and tickets	97,960.68	106,718.39		8,757.71
Advertising	49,683.19	44,504.54	5,178.65	
Foreign agency	251,611.94	193,061.77	58,550.17	
Miscellaneous	117,338.11	101,914.12	15,423.99	
General offices	313,129.67	312,776.67	353.00	
Legal department	124,233.53	140,841.29		16,607.76
Insurance	28,757 62	35,537.27		6,779.65
Total Operating Expenses	$10,387,815.10	$9,857,291.07		Net. $530,524.03 Per Ct., 5.38
Net Earnings,	$5,225,098.15	$8,604,075.19		Net. $3,378,977.04 Per Ct., 39.27

ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY'S SYSTEM—PROPER, DECEMBER 31, 1888.

SUMMARY OF MILEAGE OF ROADS EMBRACED IN THE FOREGOING STATEMENTS OF ACCOUNTS.

	Miles.	*Miles.*
Atchison, Topeka & Santa Fé R.R., Main Stem,	470.58	
Kansas City, Topeka & Western R.R.,	66.32	
Leavenworth, Northern & Southern R'y,	46.19	
Kansas City, Emporia & Southern R'y,	84.27	
Florence, Eldorado & Walnut Valley R.R.,	72.73	
Marion & McPherson R'y,	98.61	
Wichita & South-western R'y,	130.72	
The Pueblo & Arkansas Valley R.R.,	294.16	
The Denver & Santa Fé R'y,	124.27	
The New Mexico & Southern Pacific R.R.,	372.09	
The Rio Grande, Mexico & Pacific R.R.,	186.08	
Silver City, Deming & Pacific R.R.,	48.29	
Rio Grande & El Paso R.R.,	20.15	
The New Mexican R.R.,	68.11	
The Southern Kansas R'y, The Southern Kansas R'y of Texas,	941.93	
TOTAL A., T. & S. F. R.R. Co's SYSTEM—PROPER,		3,024.50

AUXILIARY COMPANIES

OF THE

Atchison, Topeka & Santa Fé Railroad Company.

SONORA RAILWAY CO., LIMITED.

GENERAL ACCOUNT, DECEMBER 31, 1888.

CAPITAL.

Assets.

COST OF PROPERTY:				
Construction to Dec. 31, 1887,		$4,064,844.40		
Rolling Stock to Dec. 31, 1887,		539,502.55		
ADDITIONS IN 1888:				
Construction,	$7,876.43			
Rolling Stock,	2,741.48	10,617.91	$4,614,964.86	
Tugs and Lighters,			18,562.73	
Wharves and Docks,			22,423.14	
Guaymas Light House,			6,048.21	
New Hotel Guaymas,			14,844.51	$4,676,843.45
Survey New Lines,				1,115.94
Coal Surveys and Prospecting,				11,241.51
Telegraph Wire and Instruments delivered Mexican Govern't as per contract,			31,280.35	
Expenses on same,			5,137.96	
Paid Mexican Government acc'nt of Contract June 4, 1883, for New Concession,			67,726.97	
Expenses incurred on New Contract of June 4, 1883,			16,969.00	121,114.28
Miscel'ous Interest on Subscriptions, etc.			$49,989.73	
Interest on Bonds, Dec. 31, 1882,			299,250.00	
Expenses Boston Office, Commissions, etc.			58,242.07	
Discount on Subscription to 1st Mort'ge and Income Bonds,			4,443,000.00	
Symon Ferguson Payment in Capital Stock,			1,312,000.00	6,162,481.80
TOTAL COST OF PROPERTY,				$10,972,796.98

Liabilities.

CAPITAL STOCK:		
52,480 Shares at $100,	$5,248,000.00	
BONDS, FUNDED DEBT:		
First Mortgage 7% Bonds,	5,248,000.00	
		$10,496,000.00

Sundry Accounts:			
Monte de Piedad,		100,000.00	
Expenses acct. Subsidy,		6,893.01	
Nat'l Revere B'k Deposit acct. Coupons,		143,115.00	
Cash on hand (Boston office)		7,335.95	
Assist. Treasurer,		8,189.98	265,533.94
Guaymas Office Acc'nts (Mexican Currency):			
Material and Fuel,	$61,938.67		
Equal in U.S. C'y to			57,579.85
Accounts Receivable:			
Auditor's Suspen'ed Accts.	2,260.72		
Cash on hand,	61,353.49		
Credit Bills,	79,554.23		
Coupon Ticket Acct.,	628.58		
Gov. State of Sonora,	4,100.00		
Mexican Federal Gov't for Transportation,	8,339.56		
Mexican Central Ry. Co.	1,156.30		
Agents, Conductors and Operators,	12,683.49		
Through Billing,	400.92		
Recollectible,	77.85	170,555.14	
Equivalent in U.S. C'y to			158,552.65
Deficit, Dec. 31, 1887,	1,759,872.72		
" 12 mos. to Dec. 31, '88	355,914.79		2,115,787.51
			$13,570,250.93

DEFERRED.

A., T. & S. F. R.R. Co.			
Guaranteed Coupons Dec. 31, 1888,		$1,275,750.00	
Current Acct. Dec. 31, 1887	$105,123.75		
Current Acct. 1888,	25,332.97	130,456.72	$1,406,206.72

CURRENT.

Coupons Due and Unpaid,	327,915.00		
Coupons due Jan. 1, 1889,	180,180.00	* 508,095.00	
S. Camacho,		9,195.66	
Unpaid Drafts,		65.00	517,355.66
Guaymas Accounts:			
Deposits,	6,932.00		
Pay Rolls,	18,244.47		
Audited Accounts,	36,004.90		
Mexican Fed'l Gov't Acct. Transit Fees,	1,115.78		
Mexican C'y,	62,297.15		
Equal in U.S. C'y to			57,913.11

INCOME AND SURPLUS.

Subsidy Account with Mexican Government,			1,092,775.44
			$13,570,250.93

Mileage, Dec. 31, 1887, . . . 262.41
" Dec. 31, 1888, . . . 262.41

Note.—There is due from Mexican Government, not included in above, $1,681,114.00 Mexican Currency, equivalent to $1,323,711.81 United States Currency.

* $364,980 due A., T. & S. F. R.R. Co. and $143,115 to Subscribers.

SONORA RAILWAY COMPANY, LIMITED.

GENERAL INCOME ACCOUNT.

For Year to December 31, 1888.

CREDITS.

Earnings:	MEXICAN CURRENCY.	UNITED STATES CURRENCY.	
Freight,	$175,237.64	$134,798.19	
Passenger,	84,143.57	64,725.82	
Extra Baggage,	1,151.57	885.82	
Telegraph,	6,857.53	5,275.02	
Express,	10,032.08	7,716.99	
Miscellaneous,	10,249.52	7,884.25	
Storage,	618.29	475.61	
	$288,290.20	$221,761.70	$221,761.70

DEBITS.

	MEXICAN CURRENCY.	UNITED STATES CURRENCY.	
Operating Expenses,	$265,670.56	$204,361.99	
Expenses Boston Office, including Salaries of Government Directors,		12,954.50	
* Twelve Months' Interest on First Mortgage Bonds,		360,360.00	577,676.49
Deficit for the Year 1888,			355,914.79
Debit Balance Income Account, Dec. 31, 1887,		1,745,517.84	
Add:			
Loss Pacific Nat'l Bank, applicable to that Period,		14,354.88	1,759,872.72
Debit Balance of Income Account, Dec. 31, 1888,			$2,115,787.51

Note.—There is due from the Mexican Government on Account of Subsidy, Mexican Currency, $1,681,114.00, equal in United States Currency at 27% to $1,323,711.81.

* Includes the Interest on Bonds held by Subscribers, accrued and paid for 12 months by Atchison Company, $283,500.00: this has been charged into the Income Account of the Atchison Company, and is only here shown to illustrate the actual operation of the Company. Also the Interest, $76,860.00, on $1,098,000.00 Bonds owned by Atchison Company.

NEW MEXICO & ARIZONA RAILROAD CO.

GENERAL ACCOUNT, DEC. 31, 1888.

Assets.			*Liabilities.*		
		CAPITAL.			
Cost of Property,		$7,002,801.81	Capital Stock,		$3,682,000.00
			Funded Debt, First Mortgage Bonds,	$2,313,000.00	
			Second Mortgage Bonds,	950,000.00	3,263,000.00
					6,945,000.00
		DEFERRED.			
Sundry Accounts:					
Stock of Fuel,	$2,784.68				
Auditor's Suspended Accounts,	1,030.05	3,814.73			
		AUXILIARY COMPANIES.			
Due from Sundry Auxiliary Companies in Current Account,	8,507.92		Due to Sundry Auxiliary Companies in Current Account,	10,316.55	
A., T. & S. F. R.R. Co. for Cash,	76,461.36	84,969.28	A., T. & S. F. R.R. Co., ac. Constr.,	57,801.81	68,118.36
		CURRENT.			
Accounts Receivable:			Accounts Payable:		
Due from Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,		9,710.48	Due to Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,		71,475.02
		INCOME.			
			*Profit for 12 Months to Dec. 31,	35,546.38	
			*Deficit, Dec. 31, 1887,	18,843.46	
			*Net Surplus, Dec. 31, 1888,		16,702.92
		$7,101,296.30			$7,101,296.30

Mileage, Dec. 31, 1887, . . . 87.78

" Dec. 31, 1888, . . . 87.78

---

* Exclusive of Interest on Bonds which are owned by A., T. & S. F. R.R. Co.

NEW MEXICO & ARIZONA RAILROAD CO.

GENERAL INCOME ACCOUNT.

For Year endng Decemebr 31, 1888.

Earnings:		
Freight,	$136,014.27	
Passenger,	42,393.68	
Mail,	5,145.39	
Express,	3,510.55	
Miscellaneous,	2,099.96	
Gross Earnings,		$189,163.85
Operating and General Expenses,		137,873.49
Net Earnings of Road,		51,290.36
Charges:		
Taxes,		15,743.98
Profit of Company,*		$35,546.38

* Interest on Bonds, which are owned by the Atchison Company, not included.

CHICAGO, SANTA FE & CALIFORNIA RAILWAY COMPANY.

(Property leased by A., T. & S. F. R.R. Co., but operated separately and distinctly.)

GENERAL ACCOUNT DECEMBER 31, 1888.

CAPITAL.

COST OF PROPERTY AND EQUIPMENT			
To Dec. 31, 1888,		$35,657,411.49	
Bridges in Process of Construction,		33,230.20	
Buildings in Process of Construction,		100,471.62	35,791,113.31
EQUIPMENT LEASES:			
Equipment being acquired under payments as Rental; when paid for to be carried to Cost of Property,			88,025.00
			35,879,138.31
*SECURITIES IN TRUST: Collateral for C. & St. L. First Mortgage Bonds:			
Boston Safe Deposit & Trust Co.:			
Bonds deposited with them:			
Mississippi River R.R. & Toll Bridge Co., First Mortgage Reg. Bonds,		650,000.00	
The Sibley Bridge Co., First Mortgage Reg. Bonds,		850,000.00	1,500,000.00
SECURITIES OWNED:			
* The Sibley Bridge Co., Capital Stock, 4,500 Shares at $100.	$450,000.00	(Nom.) 1.00	
* Miss. River R.R. & Toll Bridge Co., Capital Stock, 10,000 Shares at $100.	$1,000,000.00,	(Nom.) 1.00	2.00

CAPITAL STOCK, 150,000 Shares at $100.		15,000,000.00
FUNDED DEBT—BONDS:		
Chicago & St. Louis R'y Co. First Mortgage 6%,	1,500,000.00	
Pekin Division Mortgage 6%,	733,000.00	
Chicago, Santa Fe & Cal. R'y Co. First Mortgage Coupon 5%,	14,970,000.00	
Chicago, Santa Fe & Cal. R'y Co. First Mortgage Reg'd 5%,	380,000.00	17,583,000.00
		32,583,000.00

DEFERRED.

MATERIAL AND FUEL:			
Fuel, Stores, etc.,		340,099.12	
SUNDRY SUSPENDED ACCOUNTS:			
Surveys, etc.,	15,999.13		
Auditors Accounts in Adjustments,	72,408.46		
Line Freight Acct.,	33,850,86	122,258.45	462,357.57

EQUIPMENT LEASE WARRANTS.	
Outstanding,	17,255.00

DUE FROM AUXILIARIES in Current Traffic, Operating, and other Accounts,			416,061.50

DUE TO A., T. & S. F. R.R. Co. for Advances, ...	4,601,980.54	
DUE TO AUXILIARIES in Current Traffic,		
Operating, and other Accounts, . . .	396,028.83	
Sibley Bridge Company, ...	88,256.53	
Miss. River R.R. & Toll Br. Co., . .	67,513.39	
A., T. & S. R.R. Co. in Chicago, . .	137,500.00	
Rental of Locomotives and Cars, . .	37,974.38	5,329,253.67

CURRENT.

ACCOUNTS RECEIVABLE:			
Due from Agents, Companies, Individuals, and U. S. Government in Current Operating and Traffic Account,		258,043.74	
DEPOSITS FOR COUPONS, ETC.:			
Hanover Nat'l Bank, . . .	150,275.00		
Boston S. D. & Tr. Co., . .	235,350.00		
Farmers Loan & Tr. Co., . .	300 00	385,925.00	
CASH:			
Treasurer, ...		230,132.20	874,100.94

ACCOUNTS PAYABLE:		
Due to Companies, Individuals, etc., in Current Operating and Traffic Account, ...	699,697.79	
In Construction Account, ...	451,004.73	
	1,150,702.52	
BILLS PAYABLE:		
Notes Payable, ...	33,500.00	
BOND INTEREST COUPONS:		
Past Due, not Presented, ...	2,175.00	
Due Jan. 1, 1889, ...	383,750.00	
ACCRUING OBLIGATIONS, BUT NOT NOW DUE:		
Interest on Bonds, ...	30,000.00	
Taxes, ...	43,579.34	$1,643,706.86

INCOME.

Operations from Opening of Road July 1, 1888, to Dec. 31, 1888, ...	
DEFICIT. (See Income Statement herewith.)	441,555.21
	$39,573,215.53

	$39,573,215.53

(*See list of Securities Auxiliary Companies, page 43.)

Mileage — Dec. 31, 1888, owned 490.97; operates, including Leased Trackage, Bridges, etc., 516.70. Road opened July 1, 1888. Operations of A., T. & S. F. R.R. IN CHICAGO, SIBLEY BRIDGE, and MISSISSIPPI RIVER R.R. & TOLL BRIDGE included.

CHICAGO, SANTA FE & CALIFORNIA RAILWAY CO.

GENERAL INCOME ACCOUNT.

July 1, 1888, to December 31, 1888.

(6 Months' Operations).

Earnings:				
Freight,		$1,357,674.64		
Passenger,		305,461.29		
Mail,		11,113.78		
Express,		35,479.13		
Miscellaneous,		21,477.56		
Gross Earnings,			$1,731,206.40	
Operating and General Expenses,			1,266,432.67	
Net Earnings of Road,			$464,773.73	
Charges:				
Rentals, Rolling Stock,	$137,365.56			
Rentals, Track,	132,758.34			
Rental of Terminal,	137,500.00	$407,623.90		
Taxes,		51,349.79		
Interest on Bonds,		450,740.00	909,713.69	
Deficit of Road,			$444,939.96	
Deduct:				
Receipts from Other Sources:				
Interest andExchange Credit,		$3,382.75		
Nom'l Value Sundry Stocks, Cr.,		2.00	3,384.75	
Deficiency of Company to Dec. 31, 1888,				**$441,555.21**

ATCHISON, TOPEKA & SANTA FE R.R. CO. IN CHICAGO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

CAPITAL ACCOUNTS:			
COST OF PROPERTY:			
Construction, Real Estate, etc.,	$5,566,109.66		
Chicago Docks and Elevator Approaches,	70,860.46		
Chicago Viaducts,	68,972.41		
Franchises, etc.,	5,000,000.00	$10,705,942.53	
DEFERRED:			
Mortgaged Real Estate acquired: When Obligations thereupon are paid, to be transferred to Property Accounts,	242,500.00	242,500.00	
AUXILIARY COMPANIES:			
DUE FROM THEM:			
Bills Collectible,	4,472.16		
C., S. F. & C. R'y Co., Rental, Accrued Interest on Bonds to Dec. 31, 1888,	137,500.00	141,972.16	
CURRENT:			
Due from Sundry Companies, Individuals, etc., in Current Account,	154,675.50		
Deposit for Coupons due Jan. 1, 1889,	137,500.00		
Cash,	4,261.93	296,437.43	$11,386,852.12

Liabilities.

CAPITAL:			
Capital Stock,	$5,000,000.00		
Funded Debt 5% Bonds issued to date,	*5,500,000.00	$10,500,000.00	
DEFERRED:			
Real Estate Mortgage Notes not due until from April, 1889, to April, 1892,	207,500.00	207,500.00	
AUXILIARY COMPANIES:			
A., T. & S. F. R.R. Co.,	262,737.95		
Vouchers, Construction,	50,787.50	313,525.45	
CURRENT:			
Due to Sundry Companies, Inviduals, etc., in Current Account,	163,326.67		
BILLS PAYABLE:			
Notes Payable,	30,000.00		
Real Estate Mortgage, Note, Due Jan., 1889,	35,000.00		
BOND INTEREST:			
Coupons due Jan. 1, 1889,	137,500.00	365,826.67	$11,386,852.12

Terminal Property, Chicago.

Operated by Chicago, Santa Fé & California Railway Company and Interest on Bonds payable by that Company. Work yet in progress.

* Authorized issue of Mortgage Bonds, $10,000,000.00. Issued to December 31, as above, $5,500,000.00.

THE MISSISSIPPI RIVER RAILROAD & TOLL BRIDGE CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.

CAPITAL:			
COST OF PROPERTY:			
Construction and Franchises, . .		$1,583,875.30	
AUXILIARY COMPANIES:			
Bills Collectible, ...	1,110.46		
Chicago, S. F. & Cal. R'y Co., . .	67,513.39	68,623.85	
CURRENT:			
Bills Collectible, ...	10.00		
Cash, Treasurer, ...	18.31	28.31	
			$1,652,527.46

Liabilities.

CAPITAL:			
Capital Stock,*	1,000,000.00		
First Mortgage Bonds,*	650,000.00	$1,650,000.00	
AUXILIARY COMPANIES:			
Vouchers, ...		702.25	
CURRENT:			
Due to Companies, Individuals, etc., in Current Account, . .		1,825.21	
			$1,652,527.46

Operated by C., S. F. & Cal. R'y Co.:

---

* Bonds and Stock owned by C., S. F. & Cal. R'y Co. As that Company is liable for Interest on Bonds as Rental, and owns the Bonds, there is no Income Account.

THE SIBLEY BRIDGE COMPANY.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.		
Cost of Property, ...	$1,235,580.66	
Company's Capital Stock in Treasury, ...	450,000.00	
Chicago, Santa Fé & Cal. Ry. Co., ...	88,256.53	$1,773,837.19
Liabilities.		
Capital Stock, ...	$900,000.00	
First Mortgage Registered Bonds, ...	850,000.00	
A., T. & S. F. R.R. Co., ...	23,837.19	1,773,837.19

Bonds owned by C., S. F. & C. Ry. Co. operating the property under payment of Bond Interest as Rental: Hence no Income Account.

ST. JOSEPH, ST. LOUIS & SANTA FE RAILWAY COMPANY.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.				*Liabilities.*		
CAPITAL ACCOUNT.						
Cost of Property:				Capital Stock, ...	$970,000.00	
Franchises and Property, Old Acc't,		$1,052,778.28		Funded Debt:		
Construction (new), .	$1,352,573.18					
Real Estate, ...	4,527.58	1,357,100.76		First Mortgage Bonds, ...	1,914,000.00	$2,884,000.00
Lake Contrary R.R.		19,735.31	$2,429,614.35			
Securities Owned:						
* Atchison Union Depot Co. Stock, .		$10,336.95				
* Cap. St'k St. Jos. Term. & R.R. Co.,		125,000.00	135,336.95			
Equipment Leases, ...			60,806.63			
DEFERRED.						
Material and Stock of Fuel, ...		$3,765.73				
Auditor's Suspended Accounts, . .		27,887.34	31,653.07	Equipment Lease Warrants, ...		34,214.70
AUXILIARY COMPANIES.						
Atchison, Topeka & Santa Fe R.R. Co.:						
For Cash Balance, ...			221,377.98			
CURRENT.						
Accounts Receivable:				Accounts Payable:		
Due from Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts, ...			67,561.04	Due to Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts, ...	$129,033.33	
				Interest on Bonds,† Accrued, 5 mos., due Feb. 1, 1889, ...	175.00	129,208.33
INCOME.						
Income Account, Dec. 31, 1888, ...			101,073 01			
			$3,047,423.03			$3,047,423.03

Mileage, Dec. 31, 1887 . . . 95.70
" Dec. 31, 1888 . . . 97.20

---

* See list of Securities Auxiliary Companies accompanying Statement B.—1, Page 43.

† $7,000.00 owned by individuals.

ST. JOSEPH, ST. LOUIS & SANTA FE RAILWAY CO.

GENERAL INCOME ACCOUNT,

FOR ELEVEN MONTHS ENDING DEC. 31, 1888.

Earnings:		
Freight,		$241,435.08
Passenger,		62,008.35
Mail,		5,989.35
Express,		13,906.66
Miscellaneous,		971.79
Gross Earnings,		$324,311.23
Operating and General Expenses,		292,774.41
Net Earnings of Road,		$31,536.82
Charges:		
Taxes,	$8,616.75	
Rental Locomotives and Cars,	6,585.45	
Rental Track,	43.30	
Interest on Bonds (11 Mos.),*	105,270.00	120,515.50
Deficit of Road,		$88,978.68
Add:		
Payments account Overdraft and Interest on Notes,		844.33
Discount and Premiums,		11,250.00
Deficiency of Company for year 1888,		$101,073.01

*Includes Interest on $1,907,000 of Bonds owned by Atchison Company; charged here and credited in Atchison Company's Receipts: Bonds used to secure Atchison Company's issues.

ST. LOUIS, KANSAS CITY & COLORADO RAILROAD COMPANY.

GENERAL ACCOUNT, DECEMBER 31, 1888.

Assets.			*Liabilities.*		
			CAPITAL.		
Cost of Property,	$3,069,893.72		Capital Stock,	$1,600,000.00	
Cost of Forest Park R.R.,	764,000.00	$3,833,893.72	Funded Debt:		
			First Mortgage 6% Bonds,	1,381,000.00	$2,981,000.00
			DEFERRED.		
Material and Fuel in Stock,		16,893.43			
			AUXILIARY COMPANIES.		
			Due to Sundry Auxiliary Companies in Current Account:		
			A., T. & S. F. R.R. Co.,	$1,053,666.90	
			Interest on Bonds,* Accrued 5 Mos.,	34,525.00	1,088,191.90
			CURRENT.		
Accounts Receivable:			Accounts Payable:		
Due from Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,	$4,602.51		Due to Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,		8,324.71
Treasurer, St. Louis,	4,864.28	9,466.79			
			INCOME.		
Deficit for the Year 1888,	$190,076.50				
Deficit, Dec. 31, 1887,	27,186.17				
Net Deficit, Dec. 31, 1888,		217,262.67			
		$4,077,516.61			$4,077,516.61

Mileage. Dec. 31, 1887: Owned, 56.90; Operated (including 4.50 miles Leased), 61.40.

ST. LOUIS, KANSAS CITY & COLORADO RAILROAD CO.

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

Earnings:		
Freight,	$19,235.63	
Passenger,	25,284.33	
Mail,	2,785.86	
Express,	1,891.13	
Gross Earnings,		$49,196.95
Operating and General Expenses,		64,981.72
Net Loss,		15,784.77
Fixed Charges:		
Rental of Track,	30,000.00	
Rental of Rolling Stock,	3,161.67	
Taxes,	4,378.01	
Interest on Bonds, 11 Months,*	75,955.00	113,494.68
Deficiency after Fixed Charges,		$129,279.45
Other Charges:		
Interest on Advances,		60,797.05
Deficiency of the Company for Year 1888,		$190,076.50

---

*Bonds issued Feb. 1, 1888. Owned by Atchison Co. Charged here, and credited in Atchison Company's Receipts. Bonds used to secure Atchison Company's issues.

GULF, COLORADO & SANTA FE RAILWAY COMPANY.

GENERAL ACCOUNT, DEC. 31, 1888.

CAPITAL.

Assets.			
COST OF PROPERTY TO DATE:			
Road and Equipment to Dec. 31, 1887,		$23,256,261.04	
Additions in 1888:			
Road, ...	401,044.74		
Rolling Stock and Equipment, . .	51,197.59		
Ardmore Coal Track,	25,500.14	477,742.47	
		$23,734,003.51	
Telegraph Line, . .		114,574.05	
Galveston Wh'f Property, ...		97,449.71	$23,946,027.27
SECURITIES OWNED:			
*Beach Hotel and S.S. Imp. Co., 20 Bonds at $500 each, . .	$10,000.00		
*Bodine Coal Co., 170 Shares Stock, . .	17,000.00		27,000.00
SUNDRY ACCOUNTS:			
Insurance Paid, not yet charged into Expenses, ...	$9,967.75		
Charges and Disbursements, Recollectible,	8,846.46		
Morgan Fund, . . .	1,046.85		
B. & O.R.R. Telegraph Co., ...	3,051.23		
Capital Stock Assessment, in Suit, . .	85,000.00		
Auditor's Suspended Accounts, ...	86,698.90	$194,611.19	
Real Estate and Lands,	$322,223.97		
Bills Receivable, Land Department, . . .	149,664.64		
Bills Receivable, Sub-			
Material and Fuel, . .			

			Resources.		
CAPITAL STOCK, . . .				$4,560,000.00	
FUNDED DEBT:					
1st Mort. Bonds, 7%			$12,696,000.00		
2d Mort. Bonds, 6%					
Outstanding,	$8,064,000.00				
As Collateral, .	400,000.00		8,464,000.00	21,160,000.00	$25,720,000.00

DEFERRED.

SUNDRY ACCOUNTS:		
General Land Agent, .	$4,629.53	
Gilbert B. Shaw, . .	5,571.15	10,200.68

AUXILIARY COMPANIES.

DUE FROM AUXILIARY COMPANIES IN CURRENT OPERATING AND TRAFFIC ACCOUNTS, .			49,222.07

DUE TO AUXILIARY COMPANIES IN CURRENT OPERATING AND TRAFFIC ACCOUNTS, . . .		$215,158.46	
A., T. & S. F. R.R. Co., for Advances, . . .		333,463.08	548,621.54

CURRENT.

ACCOUNTS RECEIVABLE:			
Due from Agents, Companies, and Individuals in Current Operating and Traffic Account, ...		$220,604.02	
BILLS RECEIVABLE:			
Galveston, ...		4 172.70	
BONDS ON HAND:			
2d Mortgage Bonds owned by this Company deposited as Collateral on New York Notes, . . .		400,000.00	
CASH:			
In hands of Treasurer,	$20,607.42		
Bank Deposits for Coupons, ...	445,890.00	466,497.42	1,091,274.14

ACCOUNTS PAYABLE:			
Due to Companies, Individuals, and others in Current Operating and Traffic Account, ...		429,718.98	
BILLS PAYABLE:			
†Notes payable in New York, not yet due, secured by $400,000 2d Mtge. Bonds as Collateral, $300,000.00 Galv'st'n Notes, 30,000.00	$330,000.00		
DUE BALL, HUTCHINGS & Co., ... :	177,396.43	507,396.43	
BOND INTEREST COUPONS:			
Due and Past Due, not Presented, ...	$449,950.00		
ACCRUING OBLIGATIONS:			
Interest on Bonds accrued, but not due until April 1, . .	120,960.00	570,910.00	1,508,025.41

INCOME.

DEFICIT, Dec. 31, 1887,	$355,587.01		
" Year 1888,	1,328,790.92		1,684,377.93
			$27,786,847.63

	$27,786,847.63

Mileage, Dec. 31, 1887, . . .	1022.16
" Dec. 31, 1888, . . .	1058.00

---

* See List, page 43.

† Payable in March and April.

GULF, COLORADO & SANTA FE RAILWAY CO.

GENERAL INCOME ACCOUNT.

For the Year ending December 31, 1888.

Earnings:		
From Freight,		$2,421,482.04
Passengers,		622,503.89
Telegraph,		17,919.46
Mail,		75,918.93
Express,		77,165.63
Miscellaneous,		34,508.36
Gross Earnings,		$3,249,498.31
Operating and General Expenses,		3,082,691.19
Net Earnings,		$166,807.12
Charges:		
Interest on Bonds,	$1,333,776.67	
Taxes,	74,628.89	
Rentals of Rolling Stock,	6,602.86	1,415,008.42
Deficiency after Charges,		$1,248,201.30
To which should be added Interest and Exchange paid,		80,589.62
Deficiency of the Company for the Year 1888,		$1,328,790 92

(Road constructing until September, 1888.)

CALIFORNIA CENTRAL RAILWAY CO.

GENERAL ACCOUNT, DEC. 31, 1888.

CAPITAL.

Assets.

COST OF PROPERTY TO DEC. 31, 1888,		$12,461,760.89	
ROLLING STOCK:			
Frt. and Pass. Cars,	$91,764.08		
Locomotives,	137,857.74	229,621.82	
Wharf at San Diego,		187,518.25	
Tugs and Lighters,		35,099.04	$12,914,000.00
SECURITIES OWNED:			
*Marine Ry. & Dry Dock Co., Capital Stock,		$10,000.00	
*Marine Ry. & Dry Dock Co., Capital Stock, J. P. Whitehead, Trustee,		2,000.00	
*Precipice Cañon Water Co., Capital Stock, 15 shares at $100, $1,500,		898.13	12,898.13

Liabilities.

CAPITAL STOCK,	$6,457,000.00	
FUNDED DEBT:		
First Mortgage Bonds,	6,457,000.00	$12,914,000.00

DEFERRED

AUDITOR'S ACCOUNTS IN ADJUSTMENT,	6,638.93

AUXILIARY COMPANIES.

Due from Auxiliaries in Current Traffic, Operating, and Other Accounts,			67,268.91	**Due to Auxiliaries** in Current Traffic, Operating, and Other Accounts, . .	$143,207.42	
				A., T. & S. F. R.R. Co., ...	810,809.67	954,017.09

CURRENT.

Accounts Receivable:				**Accounts Payable:**		
Due from Agents, Companies, Individuals, and U.S. Government in Current Operating and Traffic Accounts,		$70,917.95		Due to Companies, Individuals, etc., in Current Operating and Traffic Accounts, ...		$72,207.77
Cash:						
Treasurer, ...	568,952.63					
Items in Transit from Boston,	41.88	568,994.51	639,912.46			

INCOME.

Deficit for Year 1888, ...		$301,529.53				
Surplus, Dec. 31, 1887, ...		2,023.10				
Defecit, Dec. 31, 1888, ...			299,506.43			
			$13,940.224.86			$13,940,224.86

Mileage, Dec. 31, 1887, . . . 183.55
" Dec. 31, 1888, . . . 269.09

* See list of Securities Auxiliary Companies accompanying Statement B.—1. (See page 43.)

CALIFORNIA CENTRAL RAILWAY COMPANY.

GENERAL INCOME ACCOUNT.

FOR YEAR ENDING DEC. 31, 1888.

Earnings:				
Freight,		$488,927.37		
Passenger,		508,402.91		
Mail,		18,460.90		
Express,		20,024.38		
Miscellaneous,		53,469.70		
Gross Earnings,			$1,089,285.26	
Operating Expenses,			927,376.07	
Net Earnings,			$161,909.19	
Charges:				
Rental of Track,		$71,799.25		
Rent of Equipment,		14,834.35		
Taxes,		29,740.33		
Interest on Bonds:*				
First Mortgage,	$336,540.00			
Redondo Beach Ry. Co. 1st Mtg. (as Rental),	9,450.00	345,990.00	462,363.93	
Deficit of Road,			$300,454.74	
Add:				
Interest ac. Western Office,			1,074.79	
Deficiency of Company for the year 1888.				$301,529.53

---

* Bonds all owned by A., T. & S. F. R.R. Co.

CALIFORNIA CENTRAL RAILWAY — CONSTRUCTION.

GENERAL ACCOUNT, DECEMBER 31, 1888.

WORK DONE ON CALIFORNIA CENTRAL RAILWAY, . .		$6,195,927.13			
REAL ESTATE AT LOS ANGELES:					
C. W. Smith account G. H. Bonebrake, Trustee, ...	$204,763.41				
SAN ANTONIA WATER CO. STOCK, ...	7.00	204,770.41			
DEFERRED.					
ADVANCES:					
Pacific Land and Improvement Co., . . .	122,700.00				
AUDITOR'S SUSPENDED ACCOUNTS, ...	726.99	123,426.99			
AUXILIARY COMPANIES.					
SUNDRY ACCOUNTS:			SUNDRY ACCOUNTS:		
Bills Collectible, ...		6,097.73	Atch., Top. & Santa Fe R.R. Co.,	$5,920,164.05	
			California So. R.R. Co., Gen. Acct.,	43,916.76	
			Vouchers Audited, ...	40,295.16	
			C. and D. Recollectible, ...	1,182.34	$6,005,558.31
CURRENT.					
ACCOUNTS RECEIVABLE:			ACCOUNTS PAYABLE:		
Due from Sundry Companies and Individuals in Current Account, ...		28,569.62	Due to Sundry Individuals for Wages,	4,652.19	
			Coronado Beach Co., ...	1,649.18	
			Vouchers Audited, ...	90,532.24	
			Cash, Overdraft, ...	456,399.96	553,233.57
		$6,558,791.88			$6,558,791.88

INCOME ACCOUNT, NONE.

THE CHICAGO, KANSAS & WESTERN RAILROAD COMPANY.

GENERAL ACCOUNT, DEC. 31, 1888.

Assets.			*Liabilities.*			
			CAPITAL.			
Cost of Property,	$26,209,687.58		Capital Stock,			$6,422,300.00
Rolling Stock, Frt. & Pass. Cars,	69,961.23		Funded Debt, First Mortgage Bonds and Scrip,		$13,284,000.00	
Engines,	85,453.39	$26,365,102.20	Income Bonds and Scrip,		6,642,000.00	19,926,000.00
						$26,348,300.00
			DEFERRED.			
			Auditor's Suspended Accounts,			4,299.82
			AUXILIARY COMPANIES.			
Due from Sundry Auxiliary Companies in Current Operating and Traffic Account,		21,826.04	Due to Sundry Auxiliary Companies in Current Operating and Traffic Account,		$69,905.12	
			A., T. & S. F. R.R. Co.,	$512,644.23		
			Cash Advanced, Topeka,	77,815.86	590,460.09	660,365.21
			CURRENT.			
Due from Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,	$25,440.25		Due to Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,		$49,697.10	
Boston National Bank, Deposit for Coupons due and past due,	37,425.00	62,865.25	Bond Interest Coupons, Past Due not Presented,		37,425.00	
			Accruing Obligations, but not now Due:			
			Interest on Bonds accrued, but not due until June 1, 1889,		55,350.00	142,472.10
			INCOME.			
Deficit for 12 Months to Dec. 31,	$708,598.12					
Surplus, Dec. 31, 1887,	2,954.48					
Net Deficit, Dec. 31, 1888,		705,643.64				
		$27,155,437.13				$27,155,437.13

Mileage, Dec. 31, 1887, . . . 903.16
" Dec. 31, 1888, . . . 943.29

Note.— No Material and Fuel Stock. Supplies drawn from A., T. & S. F. R.R. Co.

THE CHICAGO, KANSAS & WESTERN RAILROAD CO.

GENERAL INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

EARNINGS:		
Freight,	$535,876.01	
Passenger,	226,881.43	
Mail,	49,916.46	
Express,	30,399.37	
Miscellaneous,	16,715.77	$859,789.04
Add Rebate of 10% allowed by A., T. & S. F. R.R. Co. on interchanged business,		69,142.95
GROSS EARNINGS,		928,931.99
EXPENSES, OPERATING,		834,519.92
NET EARNINGS,		94,412.07
FIXED CHARGES:		
Interest 1st Mtg. Bonds, 12 months,	$640,091.66	
Taxes,	162,918.53	803,010.19
DEFICIENCY OF COMPANY FOR YEAR 1888,		$708,598.12

CALIFORNIA SOUTHERN RAILROAD CO.

GENERAL ACCOUNT, DEC. 31, 1888.

CAPITAL.

Assets.			*Liabilities.*			
Cost of Property,		$11,648,581.74	Capital Stock,		$6,072,000.00	
* Securities Owned:			Funded Debt:			
California So. R.R. Co. Stock (8 shares),		160.00	First Mort'ge 6% Coupon Bonds of 1922,	$2,000.00		
			First Mort'ge 6% Coupon Bonds of 1926,	2,081,000.00		
			Income 6% Regis'd Bond of 1926,	3,494,000.00		
			Income Bond Scrip,	5,610.00	5,582,610.00	$11,654,610.00

DEFERRED.

Sundry Accounts:		
Material and Fuel in Stock,	$480,396.75	
Auditor's Suspen'd Accts.	5,937.42	
Soldiers' Addi'nal Homestead Scrip,	1,477.13	487,811.30

AUXILIARY COMPANIES.

Due from Sundry Auxiliary Companies in Current Account, ...			$364,365.70	**Due to Sundry Auxiliary Companies** in Current Account, ...		$79,667.69	
				A., T. & S. F. R.R. Co., .		544,270.65	623,938.34

CURRENT.

Accounts Receivable:				**Accounts Payable:**			
Due from Agents, Companies, Individuals, and U.S.Govern't, in Current Operating and Traffic Accounts, ...		$89,053.00		Due to Companies, Individuals, etc., in Current Operating and Traffic Accounts, ...		$333,567.47	
Cash:				**Bond Interest Coupons:**			
Treas. Los Angeles, Cal., .	$46,101.31			Past Due, not Presented, .	$710.00		
Assist. Treas., Boston, .	2,289.00			Due Jan. 1, 1889, . . .	62,430.00		
Deposit for Coupons, . .	62,820.00	111,210.31	200,263.31	Int. on Regist'd Incomes, not Presented, . . .	990.00	64,130.00	397,697.47

INCOME AND SURPLUS.

Deficit for year 1888, . .		66,304.41		**Special Surplus Accounts:**			
Less—				Cancelled Bond Account,		25,000.00	
Surplus Dec. 31, 1887, . .		41,240.65		Bond Purchase Suspense Ac, ...		25,000.00	50,000.00
Total Deficit, Dec. 31, 1888,			25,063.76				
			$12,726,245.81				$12,726,245.81

Mileage,	Dec. 31, 1887, . . .	210.61
"	Dec. 31, 1888, . . .	210.61

* See list Securities owned by Auxiliary Companies accompanying Statement B.—1. (See page 43.)

CALIFORNIA SOUTHERN RAILROAD COMPANY.

GENERAL INCOME ACCOUNT, DEC. 31, 1888.

Earnings:			
Freight,	$705,571.52		
Passenger,	659,595.27		
Mail,	17,146.35		
Express,	20,026.52		
Miscellaneous,	48,474.86		
Gross Earnings,		$1,450,814.52	
Operating and General Expenses,		1,200,748.79	
Net Earnings of Road,		250,065.73	
Charges:			
Rent of Equipment,	39,162.06		
Taxes,	28,065.99		
Interest on Bonds,	229,620.00	296,848.05	
Deficit of Road,		46,782.32	
Deduct:			
Receipts from Other Sources:			
Interest General Account,	5,232.20		
Track Rental,	245.71	5,477.91	
		41,304.41	
Sinking Fund,		25,000.00	
Deficiency of Company for Year 1888,			$66,304.41

LEAVENWORTH, TOPEKA AND SOUTH-WESTERN RAILWAY CO.

GENERAL ACCOUNT, DECEMBER 31, 1888.

ASSETS.

CAPITAL:		
Cost of Property,	$2,746,202.44	
Rolling Stock,	29,273.96	
		$2,775,476.40
AUXILIARY COMPANIES:		
Due from Auxiliaries in Current Traffic, Operating, and other Accounts,	$4,371.89	
Leavenworth Depot & R.R. Co.,	28,152.03	32,523.92
CURRENT:		
Accounts Receivable:		
Due from Agents, Companies, etc., in Current Operating and Traffic Accounts,		2,685.55
INCOME:		
Deficit for 12 Months to Dec. 31, 1888,	112,720.52	
Deficit, Dec. 31, 1887,	385,528.41	
Deficit, Dec. 31, 1888,		498,248.93
		$3,308,934.80

LIABILITIES.

CAPITAL:			
Capital Stock,		$1,380,000.00	
Funded Debt:			
General Mortgage Bonds,		1,380,000.00	$2,760,000.00
AUXILIARY COMPANIES:			
Due to A., T. & S. F. R.R. Co., Cash Advanced,		$70,094.45	
A., T. & S. F. R.R. Co. for Advances Account Construction, Bond Interest, and Operating,		212,416.49	
Union Pacific R'y Co. for Advances Account Construction, Bond Interest, and Operating,		214,634.98	
Due to Auxiliaries in Current Traffic, Operating, and other Accounts,		9,806.02	506,951.94
CURRENT			
Accounts Payable:			
Due to Companies, Individuals, etc., in Current Operating and Traffic Accounts,		$14,192.86	
Bond Interest Coupons:			
Due Jan. 1, 1889,	27,600.00		
Past Due, not Presented,	190.00	27,790.00	41,982.86
			$3,308,934.80

Property jointly owned by the U. P. & A., T. & S. F. R.R. Cos.
Mileage, Dec. 31, 1887, 46.30.
" Dec. 31, 1888, 46.30. Operated Mileage, including 10.51 miles Trackage over A., T. & S. F. R.R., 56.81.

GENERAL INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

EARNINGS:			
Freight,	$10,374.70		
Passenger,	21,118.09		
Mail,	2,004.24		
Express,	2,766.00		
Miscellaneous,	646.13		
Gross Earnings,		$36,909.16	
OPERATING EXPENSES,		83,077.37	
Net Loss,			$46,168.21
CHARGES:			
Taxes,		8,526.68	
Interest on General Mortgage Bonds, 12 mos. to Dec. 31, 1888,		55,200.00	63,726.68
DEFICIT OF ROAD,			$109,894.89
ADD:			
Interest and Exchange,			2,825.63
DEFICIENCY OF THE COMPANY FOR YEAR 1888,			$112,720.52

A., T. & S. F. R.R. Co.'s Interest one-half.

MANHATTAN, ALMA & BURLINGAME RAILWAY CO.

General Account, December 31, 1888.

ASSETS.

CAPITAL:			
Cost of Road and Equipment to Dec. 31, 1888,			$1,678,000.00
AUXILIARY COMPANIES:			
Due from Auxiliaries in Current Traffic, Operating, and other Accounts,			1,564.59
CURRENT:			
Accounts Receivable:			
Due from Agents, Companies, Individuals, etc., in Current Operating and Traffic Accounts,			1,659.15
INCOME:			
*Deficit for 12 Months to Dec. 31,		$43,207.28	
*Deficit, Dec. 31, 1887,		562.32	
*Deficit, Dec. 31, 1888,			43,769.60
			$1,724,993.34

LIABILITIES.

CAPITAL:			
Capital Stock,		$1,000,000.00	
FUNDED DEBT:			
First Mortgage Bonds,		678,000.00	$1,678,000.00
DEFERRED:			
Sundry Suspended Accounts:			
Auditor's,	Cr. $3,079.89		
Treasurer's	Dr. 1.04		3,078.85
AUXILIARY COMPANIES:			
A., T. & S. F. R.R. Co., Cash Advances,		$24,010.37	
Due to Auxiliaries in Current Traffic, Operating, and other Accounts,		7,173.41	31,183.78
CURRENT:			
Accounts Payable:			
Due to Companies, Individuals, etc., in Current Operating and Traffic Accounts,			12,730.71
			$1,724,993.34

(*Exclusive of Interest on Bonds which are owned by A., T. & S. F. R.R. and U. P. Ry. Companies.)

Property jointly owned by the U. P. Ry. and A., T. & S. F. R.R. Cos.
Mileage, Dec. 31, 1887, 56.62
" Dec. 31, 1888, 56.62

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

EARNINGS:			
Freight,	$15,400.73		
Passenger,	8,081.79		
Mail,	3,378.93		
Express,	3,384.60		
Miscellaneous,	653.52		
Gross Earnings,		$30,899.57	
OPERATING EXPENSES,		64,041.64	
Net Loss,		33,142.07	
CHARGES:			
Taxes,		9,986.06	
DEFICIT OF ROAD,		$43,128.13	
ADD:			
Interest on Advances by A., T. & S. F. R.R. Co.	*Dr.* 459.33		
Profits from Town of Eskridge for First Six Months of 1888,	*Cr.* 280.18	179.15	
DEFICIENCY OF COMPANY FOR YEAR 1888,			$43,207.28

A., T. & S. F. R.R. Co.'s Interest one-half.

THE WICHITA AND WESTERN RAILROAD COMPANY.

GENERAL ACCOUNT, DECEMBER 31, 1888.

ASSETS.

CAPITAL:			
Cost of Property and Equipment to Dec. 31, 1888,	$1,296,247.01		
SECURITIES OWNED:			
* The Kingman, Pratt & Western R.R. Co. Capital Stock, 3,800 Shares, at $100.00,—$380,000.00, (Nom.)	1.00		1,296,248.01
DEFERRED:			
Material and Supplies in Stock,			1,367.18
CURRENT:			
Accounts Receivable:			
Due from Agents, U.S. Government, etc., in Current Operating and Traffic Accounts.		$15.958.70	
CASH:			
Treasurer,		23,124.21	39,082.91
INCOME:			
Deficit for the Year 1888,		46,261.72	
Surplus, Dec. 31, 1887,		29,620.90	
Deficit, Dec. 31, 1888,			16,640.82
			$1,353,338.92

LIABILITIES.

CAPITAL:		
Capital Stock,	$450,000.00	
Funded Debt:		
First Mortgage Bonds,	791,000.00	
		$1,241,000.00
AUXILIARY COMPANIES:		
Due to Auxiliary Companies in Current Account,	$27,255.54	
The Kingman, Pratt & Western R.R. Co.,	28,235.79	55,491.33
CURRENT:		
Accounts Payable:		
Due to Companies, etc., in Current Operating and Traffic Accounts,		56,847.59
		$1,353,338.92

Property jointly owned by the St. Louis & San Francisco Ry. and A., T. & S. F. R.R. Companies.
Mileage, Dec. 31, 1887, 44.93.
" Dec. 31, 1888, 44.93.

GENERAL INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

EARNINGS:		
Freight,	$34,385.89	
Passenger,	33,784.42	
Mail,	3,601.32	
Express,	4,434.62	
Miscellaneous,	10,670.61	
Gross Earnings,		$86,876.86
OPERATING AND GENERAL EXPENSES,		77,961.46
Net Earnings,		$8,915.40
CHARGES:		
Taxes,	$7,718.12	
Interest on Bonds,	47,460.00	55,178.12
DEFICIT OF ROAD,		46,262.72
DEDUCT:		
Nominal Value of The K. P. & W. R.R. Co. Capital Stock,		1.00
DEFICIENCY OF COMPANY FOR THE YEAR 1888,		$46,261.72

A., T. & S. F. R.R. Co.'s Interest one-half.

---

* See List of Securities Auxiliary Companies, page 43.

THE KINGMAN, PRATT & WESTERN RAILROAD CO.

General Account, December 31, 1888.

ASSETS.

Capital:		
Cost of Property,		$1,534,599.30
Deferred:		
Material and Fuel:		
Fuel, Stores, etc.,		509.10
Auxiliary Companies:		
The Wichita & Western R.R. Co.,		28,235.79
Current:		
Accounts Receivable:		
Due from Agents, Companies, Individuals, U.S. Government, etc., in Current Operating and Traffic Accounts,		9,122.71
Income:		
Deficit for Year 1888,	$106,899.69	
Deficit, Dec. 31, 1887,	7,862.67	
Deficit, Dec. 31, 1888,		114,762.36
		$1,687,229.26

LIABILITIES.

Capital:		
Capital Stock,	$585,000.00	
Funded Debt:		
First Mortgage Bonds,	956,000.00	$1,541,000.00
Auxiliary Companies:		
Bills Payable:		
Notes Payable, due A., T. & S. F. & St. L. & S. F. R. Cos.,		116,000.00
Current:		
Accounts Payable:		
Due to Companies, Individuals, etc., in Current Operating and Traffic Accounts,		30,229.26
		$1,687,229.26

Property jointly owned by the St. Louis & San Francisco R'y and A., T. & S. F. R.R. Cos.

Mileage, Dec. 31, 1887, 79.71
" Dec. 31, 1888, 79.71

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

Earnings:		
Freight,	$17,267.06	
Passengers,	19,261.18	
Mail,	5,511.87	
Express,	7,219.91	
Miscellaneous,	498.80	
Gross Earnings,	$49,758.82	
Operating Expenses,	83,096.61	
Net Loss,		$33,337.79
Charges:		
Taxes,	$14,701.90	
Interest on Bonds,	57,360.00	72,061.90
Deficit of Road,		$105,399.69
Add:		
General Interest,		1,500.00
Deficiency of Company for the Year 1888,		$106,899.69

A. T., & S. F. R.R. Co.'s Interest one-half.

ATLANTIC AND PACIFIC

GENERAL ACCOUNT,

ASSETS.

CAPITAL:				
COST OF PROPERTY AND EQUIPMENT TO DEC. 31, 1888:				
Western Division,	$95,072,274.47			
Central "	23,791,771.49			
California "	124,104.56	$118,988,150.52		
SECURITIES HELD IN TRUST:				
Mercantile Trust Co., New York, First Mortgage Bonds (1891) W.D.,	15,974,000.00			
Mercantile Trust Co., New York, First Mortgage Bonds (1922) C.D.,	1,604,000.00	17,578,000.00		
SECURITIES OWNED:				
Prescott & Arizona Central Ry. Co. Bonds,		18,000.00	$136,584,150.5	
DEFERRED:				
SUNDRY SUSPENDED ACCOUNTS:				
Auditor's Accounts in Adjustment,	82,826.77			
Wilbur and Associates,	105,000.00	187,826.77		
SUNDRY TOWN SITES,		1,226.07		
MATERIAL AND SUPPLIES,		245,502.35		
SUNDRY TRUSTEES:				
E. W. Kinsley, Trustee,	11,291.32			
U. S. Trust Co., Trustee,	21,011.70	32,303.02	466,858.2	
AUXILIARY COMPANIES:				
DUE FROM AUXILIARIES in Current Traffic, and other Accounts,			156,543.7	
NOTES RECEIVABLE:				
Ar. Min. Belt Ry. Co., Past Due,	25,000.00			
Pres. & Ar. Cent'l Ry. Co., Past Due,	3,449.63		28,449.6	
			137,236,002.1	
CURRENT:				
ACCOUNTS RECEIVABLE:				
Due from Agents, Companies, Individuals, and U.S. Government in Current Operating and Traffic Accounts,	498,066.44			
Land Department,	316.10	498,382.54		
CASH:				
Treasurer, Boston,	24,125.74			
Cashier, Albuquerque,	16,262,35			
Land Commissioner,	651.32			
Mercantile Trust Co., New York, Deposit for Payment of Coupons,	355,660.00	396,699.41	895,081.	
INCOME:				
DEFICIT FOR THE YEAR 1888:				
Western Division,	1,381,466.62			
Central Division,	187,851.65	1,569,318.27		
Deficit, Dec. 31, 1887:				
Western Division,	3,294,711.37			
Central Division,	1,048,187.90	4,342,899.27		
DEFICIT, Dec. 31, 1888,		5,912,217.54		
Land Department:				
Deficit, year 1888,	9,085.93			
Deficit, Dec. 31, 1887,	19,626.26			
DEFICIT, Dec. 31, 1888,		28,712.19		
DEFICIT OF COMPANY, DEC. 31, 1888,			5,940,929.	
			$144,072,013.	

The Company owns 18,820,000 Acres of Land the value for which is not included in this account.

Mileage, 918.86. Operated Mileage,—including 12.69 miles Trackage over A., T. & S. F. R.R., and deducting 4.40 miles Spur to Gallup Mines,—927.15.

ILROAD COMPANY.

EMBER 31, 1888.

LIABILITIES.

CAPITAL:

PITAL STOCK:				
Common, Western Division,		$78,261,600.00		
Preferred, Missouri "		98,700.00		
" Central "		1,400,000.00	$79,760,300.00	
NDED DEBT,—BONDS:				
First Mortgage, Due 1910, Western Division,		$16,000,000.00		
" " and Scrip, Due 1891, Cent. Div.,		1,189,905.00		
" " Due 1922, " "		1,604,000.00		
Land Grant, " 1901, " "		796,629.00		
Guar. Trust 4%, Western Division,	$15,974,000.00			
" " " Central "	1,604,000.00	17,578,000.00		
Second Mortgage 6%, Western Div.,		5,600,000.00		
Income Bonds, Due 1910, " "		12,000,000.00		
" " " 1922, Cent. "		1,823,000.00	56,591,534.00	$136,351,834.00

AUXILIARY COMPANIES:

UE TO A., T. & S. F. R.R. Co., Account of Construction, Interest, etc.,			$1,139,836.66	
UE TO S. L. & S. F. Ry. Co., Account of Construction, Interest, etc.,			562,138.31	
UE TO AUXILIARIES in Current Traffic, Operating and other Accounts,			19,166.17	
TES PAYABLE, held by A., T. & S. F. and St. L. & S. F. Co.s:				
Western Division,		$2,667,302.29		
" " Rebate Loans,		1,016,866.45		
Central "		820,018.67	4,504,187.41	6,225,328.55
				142,577,162.55

CURRENT:

CCOUNTS PAYABLE:				
Due to Companies, Individuals, etc., in Current Operating and Traffic Accounts,			787,595.95	
OND INTEREST COUPONS:				
Past Due, not presented,		3,850.00		
Due Jan. 1,		352,080.00	355,930.00	
axes in Litigation,			118,363.80	
CCRUING OBLIGATIONS, BUT NOT NOW DUE:				
Interest on Bonds, Western Division,	$11,895.00			
" " Central "	112,000.00	$123,895.00		
Rental, Mojave Div.,		109,066.50	232,961.50	1,494,851.25
				$144,072,013.80

ATLANTIC AND PACIFIC RAILROAD CO.

GENERAL INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

EARNINGS:		West. Division.	Cent'l Division.	Total.
Freight,		$1,826,637.05	$39,682.86	$1,866,319.91
Passenger,		931,732.28	14,256.73	945,989.01
Mail,		84,408.99	7,636.06	92,045.05
Express,		128,415.96	555.55	128,971.51
Miscellaneous,		8,888.51	173.66	9,062.17
Gross Earnings,		$2,980,082.79	62,304.86	3,042,387.65
OPERATING AND GENERAL EXPENSES,		3,050,548.27	114,626.51	3,165,174.78
NET LOSS,		$70,465.48	52,321 65	122,787.13
CHARGES:				
Taxes,	$108,803.73			
Rental (Mojave Division),	436,266.00			
Rental of Track,	10,792.10			
Rental of Locomotives and Cars,	9,288.83	565,150.66		565,150.66
Interest on Bonds,		752,000.00	135,530.00	887,530.00
Total Charges,		$1,317,150.66	135,530.00	1,452,680.66
DEFICIT OF ROAD,		$1,387,616.14	187,851.65	1,575,467.79
DEDUCT:				
MISCELLANEOUS RECEIPTS:				
Interest and Exchange,	$1,149.52			
Land Grant Trustee,	5,000.00	6,149.52		6,149.52
		$1,381,466.62	187,851.65	1,569,318.27
ADD:				
Land Department:				
Receipts,		$37,354.47		
Expenses and Charges,		46,440.40		
Deficit, Land Department,				9,085.93
DEFICIENCY OF COMPANY FOR YEAR 1888,				$1,578,404.20

THE KANSAS CITY BELT RAILWAY COMPANY.

General Account, December 31, 1888.

ASSETS.

Capital:		
Cost of Property,	$1,835,851.23	
Equipment,	52,685.39	$1,888,536.62
Deferred:		
Material and Fuel in Stock,		8,261.02
Current:		
Accounts Receivable:		
Due from Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,	84,516.55	
Cash on Hand,	6,068.49	90,585.04
		$1,987,382.68

LIABILITIES.

Capital:			
Capital Stock,		$100,000.00	
Funded Debt, First Mortgage Bonds,		1,780,000.00	$1,880,000.00
Subscriptions to First Mortgage Bonds:			
K. C., T. & W. R.R. (A., T. & S. F. R.R. Co.),	$2,132.77		
K. C., F. S. & M. R.R.,	1,360.18		
C., M. & St. P. Ry.,	887.35		4,380.30
Current:			
Accounts Payable:			
Due to Sundry Companies, Individuals, etc., in Current Operating and Traffic Accounts,			62,820.37
Income:			
Credit to Dec. 31, 1887,		35,689.98	
Surplus for Year ending Dec. 31, 1888,		4,492.03	
Credit, Dec. 31, 1888,			40,182.01
			$1,987,382.68

Mileage, Dec. 31, 1888:

In Missouri: Main Track, 7.042 Miles; Double and Side Track, 21.638 Miles.
" Kansas: " " 2.793 " " " " " 5.016 "
Total Mileage: " " 9.835 " " " " " 26.654 "
Total Track, ... 36,489 Miles.

GENERAL INCOME ACCOUNT.

For Year ending Dec. 31, 1888.

Earnings:		
Switching and Transferring,	$87,002.25	
Rentals,	81,996.40	
Miscellaneous,	2,425.31	
Gross Earnings,	171,423.96	
Operating and General Expenses,	72,312.89	
Net Earnings,		$99,111.07
Charges:		
Taxes,	$4,455.61	
Interest on Bonds,	90,163.43	94,619.04
Profit of Company for Year 1888,		$4,492.03

Property owned, one-half by Kansas City, Topeka & Western R.R. Co. (A., T. & S. F. R.R Co.)

THE LAS VEGAS HOT SPRINGS COMPANY.

General Account, December 31, 1888.

ASSETS.

Cost of Property:				
Phœnix Hotel,		$274,485.97		
Stone Hotel,		52,973.44		
Bath Houses,		54,646.47		
Water Works,		81,457.98		
Grounds and Buildings other than Hotels, and Baths,		158,126.62		
Real Estate,		54,213.39		
Miscellaneous,		19,297.15	$695,201.02	
Capital Stock in Treasury,			53,400.00	
Supplies on Hand,			12,081.05	
Current:				
Expense Bills,		2,346.64		
Ticket Account, H. M. Shaw, Manager,		59.90		
H. M. Shaw, Manager,		7,535.29	9,941.83	
Income Account:				
Deficit to Dec. 31, 1887,		247,481.32		
Deficit Twelve Months to Dec. 31, 1888,		38,711.10	286,192.42	$1,056,816.32

LIABILITIES.

Capital Stock,			$300,000.00	
New Mexico & So. Pacific R.R. Co.:				
Due for Advances,			746,709.21	
Current:				
Pay Rolls,	$6,960.62			
Less Pay Checks Paid,	6,457.63	502.99		
Unclaimed Wages,		428.10		
Sundry Bills,		482.17		
Vouchers,		8,693.85	10,107.11	$1,056,816.32

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

Earnings:		
Phœnix Hotel,	$72,154.06	
Bath Houses,	4,926.65	
Miscellaneous,	2,143.02	$79,223.73
Expenses:		
Phœnix Hotel,	94,052.88	
Bath Houses,	11,076.59	
Maint. and Repairs Grounds,	4,467.55	
" " " Buildings,	960.51	
" " " Water Works,	413.44	
Miscellaneous,	3,488.86	114,454.83
Net Loss,		$35,231.10
Charges:		
Taxes,		3,480.00
Deficiency of Company for Year 1888,		$38,711.10

Property owned by N. M. & S. P. R.R. Co. (Atchison Company).

THE CANON CITY COAL CO.

General Account, December 31, 1888.

ASSETS.

Capital:		
Cost of Property and Equipment to Dec. 31, 1888,		$956,948.70
Investments:		
Williamsburg Townsite,		84.20
Deferred:		
Stock in Storehouse: Material and Stores,		42,271.22
Current:		
Accounts Receivable:		
Due from Agents, Companies, Individuals, etc., in Current Operating and Stock Accounts,	$21,406.82	
Coal sold,	*37,896.06	
	59,302.88	
Cash:		
Deposited in Fremont Co. Bank,	1,067.21	
Stock of Coal:		
Coal on Hand,	572.32	60,942.41
		$1,060,246.53

*Includes Amount due from A., T. & S. F. R.R. Co.

LIABILITIES.

Capital:			
Capital Stock,			$425,000.00
Auxiliary Companies:			
Due to P. & A. V. R.R. Co. for Advances,		$380,000.00	
Due to A., T. & S. F. R.R. Co., Cash Account,		132,856.26	512,856.26
Current:			
Accounts Payable:			
Due to Companies, Individuals, etc., in Current Operating and Stock Accounts,			68,157.10
Income and Surplus:			
Profit for the Year 1888,		5,937.15	
Surplus, Dec. 31, 1887,		8,849.15	
Surplus, Dec. 31, 1888,		14,786.30	
Profit on Investments:			
Rockvale Townsite,	$10,029.91		
Brookside "	4,416.96	14,446.87	
Special Surplus—Sinking Fund,		25,000.00	54,233.17
			$1,060,246.53

GENERAL INCOME ACCOUNT.

For the Year ending December 31, 1888.

Earnings:			
Coal: Sales,		$619,631.57	
Mining Expenses,		600,498.31	
Net Earnings from Mining,			$19,133.26
Add:			
Net Receipts from other Sources:—			
Storehouse,		11,451.46	
Rents,		2,227.04	
Miscellaneous,	Loss,	22.77	13,655.73
Net Earnings of Property,			32,788.99
Charges:			
Taxes,		$4,345.21	
Interest on Advances, to Dec. 31, 1888,	$21,976.80		
Interest on Notes in July,	529.83	22,506.63	26,851.84
Surplus of the Company for Year 1888,			$5,937.15

Property owned by The Pueblo & Ark. Valley R.R. Co. (Atchison Company).

THE TRINIDAD COAL AND COKING COMPANY.

GENERAL ACCOUNT, DECEMBER 31, 1888.

ASSETS.

CAPITAL:			
Cost of Property and Equipment to Dec. 31, 1888,			$338,972.13
DEFERRED:			
Material and Supplies:			
Stock in Storehouse,			7,785.55
CURRENT:			
Accounts Receivable:			
Due from Companies, Individuals, etc., in Current Account,		$33,201.72	
STOCK OF COAL:			
Coal and Coke on Hand,		675.76	33,877.48
INCOME:			
Surplus for the Year ending Dec. 31, 1888,		$20,216.36	
Surplus, Dec. 31, 1887,	$7,290.97		
Deduct Payment to Col. Coal and Iron Co., for Royalty on Coal mined from that Co.'s Property,*	67,697.50	60,406.53	
Gross Deficit, Dec. 31, 1888,			40,190.17
			$420,825.33

LIABILITIES.

CAPITAL:			
Capital Stock,		$162,500.00	
Funded Debt:			
First Mortgage Bonds,		100,000.00	$262,500.00
AUXILIARY COMPANIES:			
Due to A., T. & S. F. R.R. Co. for Cash Advanced,			46,342.26
CURRENT:			
Accounts Payable:			
Due to Agents, Companies, Individuals, etc., in Current Account,		$27,283.07	
ACCRUING OBLIGATIONS, BUT NOT NOW DUE:			
Interest on Bonds,	$1,000.00		
Taxes,	1,200.00	2,200.00	29,483.07
SURPLUS:			
Sinking Funds:			
Account Real Estate, Buildings, and Equipment,		$32,500.00	
Account First Mortgage Bonds,		50,000.00	82,500.00
			$420,825.33

* Whole Amount Royalty paid,	$72.395.40
Amount applicable to Dec., 1887,	$67,697.50
" " " April, 1888,	4,697.90

GENERAL INCOME ACCOUNT.

FOR YEAR ENDING DECEMBER 31, 1888.

EARNINGS:		
COAL: Sales,	$178,084.89	
Mining Expenses,	175,031.06	$3,053.83
COKE: Sales,	$97,851.38	
Cost of Production,	70,879.84	26,971.54
NET EARNINGS FROM PRODUCTION,		$30,025.37
ADD:		
NET RECEIPTS FROM OTHER SOURCES:		
Storehouse,	1,965.66	
Rents,	962.87	
Miscellaneous,	225.05	3,153.58
NET EARNINGS OF PROPERTY,		$33,178.95
CHARGES:		
Taxes, estimated,	$1,200.00	
Interest on First Mortgage Bonds Due and Paid,	5,000.00	
Accrued for Two Months,	1,000.00	
* Royalty Ten Cents per Ton on 46,979 Tons Coal, January to April,	4,697.90	11,897.90
PROFIT OF THE COMPANY,		$21,281.05
DEDUCT:		
Interest on Advances by A., T. & S. F. R.R. Co.,		$1,064.69
SURPLUS OF THE COMPANY FOR YEAR 1888,		$20,216.36

* Whole Amount Royalty paid in Aug., 1888, $72,395.40, or Ten Cents per Ton on 723,954 Tons Coal. Amount chargeable to period prior to Jan. 1, 1888, 676,975 Tons at Ten Cents, $67,697.50.

Property owned by The P. & A. V. R.R. Co. (Atchison Company.)

CHEROKEE AND PITTSBURG COAL AND MINING CO.

General Account, December 31, 1888.

ASSETS.

Capital:			
Cost of Property and Equipment to Dec. 31, 1888,			$465,483.55
Deferred:			
Material and Stores:			
Stock in Storehouse,		$15,850.91	
Property Owned:			
Frontenac Townsite,	$40,601.43		
Chicopee "	12,196.06	52,797.49	68,648.40
Current:			
Accounts Receivable:			
Due from Agents, Companies, Individuals, etc., in Current Operating and Stock Accounts,		6,487.86	
Coal sold,		*64,256.91	
Cash:			
In Bank,		644.82	
Stock of Coal:			
Coal on Hand,		624.27	72,013.86
			$606,145.81

*Includes Amount due from A., T. & S. F. R.R. Co.

LIABILITIES.

Capital:			
Capital Stock,			$200,000.00
Auxiliary Companies:			
Due for Advances:			
The So. Kansas Ry. Co., Boston,		$200,000.00	
A., T. & S. F. R.R., Cash Account,		66,838 12	
Due to The So. Kan. Ry. Co. for Dividend on Capital Stock, Dec. 31, 1888,		18,000.00	284,838.12
Current:			
Accounts Payable:			
Due to Companies, Individuals, etc., in Current Operating and Stock Accounts,			73,787 38
Income and Surplus:			
Surplus for Year ending Dec. 31, 1888,		9,932.17	
Surplus, Dec. 31, 1887,	$3,911.77		
Deduct: Dividend on Capital Stock 6 mos. to Dec. 31, 1887, declared Dec. 31, 1888,	6,000.00	Def. 2,088.23	
Surplus, Dec. 31, 1888,		7,843.94	
Special Surplus — Sinking Fund,		39,676.37	47,520.31
			$606,145.81

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

Earnings:		
Coal: Sales,	$298,458.66	
Mining Expenses,	240,693 62	
Net Earnings from Production,		$57,765.04
Add:		
Net Receipts from Other Sources:		
Storehouse,	5,062.69	
Rents,	4,703.14	
Miscellaneous,	82.96	9,848.79
Net Earnings of Property,		$67,613.83
Charges:		
Taxes,	1,801.46	
Interest on A., T. & S. F. R.R. Co. Advances,	13,880.20	
Sinking Fund,	30,000.00	45,681.66
Profit of Company,		$21,932.17
Deduct:		
Dividend on Capital Stock, one year @ 6%,		12,000.00
Surplus for the Year 1888,		$9,932.17

Owned by The Southern Kansas Ry. Co. (Atchison Company).

THE OSAGE CARBON COMPANY.

General Account, December 31, 1888.

ASSETS.

Capital:				
Cost of Property and Equipment to Dec. 31, 1888,				$633,781.59
C. S. Tuckerman, Trustee:				
Fund for Purchase of Bonds,				151,061.07
Deferred:				
Material and Supplies:				
Stock in Storehouse,				14,661.13
Current:				
Accounts Receivable:				
Due from Agents, Companies, Individuals, etc., in Current Operating and Stock Accounts,			$7,444.24	
Coal Sales,*			63,429.10	
Cash:				
Deposits:				
Central National Bank, Topeka,	$5,029.74			
Less Advances by A., T. & S. F. R.R Co.,	3,389.30	$1,640.44		
Osage County Bank		412.50		
Sheldon & Bootey,		8,393.46	$10,446.40	
Stock of Coal:				
Coal on Hand,			1,778.34	
“ Stripped: Mine No. 1, Value	$4,321.25 Cost	$3,366.58		
“ “ 2, “	16,831.92	16,120.78	19,487.36	102,585.44
Income:				
Deficit for the year ending Dec. 31, 1888,			$7,699.85	
Surplus, Dec. 31, 1887,			5,698.90	
Deficit, Dec. 31, 1888,				2,000.95
				$904,090.18

*Includes Amount due from A., T. & S. F. R.R. Co.

LIABILITIES.

Capital:			
Capital Stock,			$300,000.00
Funded Debt:			
First Mortgage Bonds (1880),		$200,000.00	
First Mortgage Bonds (1888),		160,000.00	360,000.00
			660,000.00
Current:			
Accounts Payable:			
Due to Companies, Individuals, etc., in Current Operating and Stock Accounts,		56,523.51	
Bond Interest, Accrued, but not Due,		6,066.67	
Sinking Funds, “ “ “ “		7,500.00	70,090.18
Special Surplus:			
Sinking Funds,			174,000.00
			$904,090.18

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

Earnings:			
Coal: Sales,		$527,357.32	
Mining Expenses,		495,920.44	
Net Earnings from Mining,			$31,436.88
Add:			
Net Receipts from Other Sources:			
Storehouse,		914.29	
Rents,		1,440.32	
Miscellaneous,		1,001.13	3,355.74
Net Earnings of Property,			34,792.62
Charges:			
Taxes,	3,371.58		
Royalty on Coal mined,	298.63	3,670.21	
Interest on First Mortgage Bonds (1880), 12 Mos.,		14,000.00	
Interest on First Mortgage Bonds (1888), 10½ Mos., to Dec. 31, 1888,		9,800.00	
Sinking Fund Reserve. Due Nov. 1, 1888,	3,000.00		
“ “ “ Accrued to Dec. 31, 1888,	7,500.00	10,500.00	37,970.21
Deficit of Property,			3,177.59
Add:			
Farm Expenses,*			4,522.26
Deficiency of the Company for Year 1888,			$7,699.85

*The value of Farm Products on hand Dec. 31, 1888, resulting from this expenditure is $6,848.12.

Property owned by Atchison Company.

THE SAN PEDRO COAL AND COKE COMPANY.

General Account, December 31, 1888.

ASSETS.

Capital:			
Cost of Property and Equipment to Dec. 31, 1888,			$332,638.22
Deferred:			
Material and Supplies:			
Stock in Storehouse,			19,660.19
Auxiliary Companies:			
Due from A., T. & S. F. R.R. Co.:			
In Cash Account,		$14,458.83	
In Current Account,		6,185.53	20,644.36
Current:			
Accounts Receivable:			
Due from Agents, Companies, Individuals, etc., in Current Operating and Stock Account,		$7,439.26	
Stock on Hand:			
Coal,	$693.65		
Coke,	9,739.92	10,433.57	17,872.83
			$390,815.60

LIABILITIES.

Capital:		
Capital Stock,		$40,000.00
Deferred:		
San Pedro Hospital Fund,		901.83
Auxiliary Companies:		
Due to A., T. & S. F. R.R. Co. for Cash Advanced, Boston Office,	$120,000.00	
Due to A., T. & S. F. R.R. Co. for Dividend on Capital Stock,	2,400.00	122,400.00
Current:		
Accounts Payable:		
Due to Companies, Individuals, etc., in Current Operating and Stock Accounts,		12,031.36
Income:		
Profit for Year 1888,	$5,607.18	
Surplus, Dec. 31, 1887,	9,875.23	
Surplus, Dec. 31, 1888,		15,482.41
Special Surplus:		
Sinking Fund,		200,000.00
		$390,815.60

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

Earnings:			
Coal: Sales,	$218,507.69		
Mining Expenses,	142,276 61	$76,231.08	
Coke: Sales,	67,203.93		
Cost of Production,	51,707.95	15,495.98	
Net Earnings from Production,		$91,727,06	
Add:			
Net Receipts from Other Sources:			
Storehouse,	3,321.32		
Rents,	3,331.97		
Miscellaneous,	89.64	6,742.93	
Net Earnings of Property,		$98,469.99	
Charges:			
Taxes,	701.23		
Interest on A., T. & S. F. Advances,	4,761.58		
Sinking Fund,	85,000.00	90,462.81	
Profit of Company for Year 1888,		$8,007.18	
Deduct:			
Dividend No. 2, on Capital Stock, Payable Dec. 31, 1888, 6%,		2,400.00	
Balance of Surplus for the Year 1888,			$5,607.18

Property owned by Atchison Company.

RATON COAL AND COKE CO.

General Account, December 31, 1888.

ASSETS.

Capital:		
Cost of Property and Equipment to Dec. 31, 1888,		$1,199,716.49
Deferred:		
Material and Stores:		
Stock in Storehouse,		12,746.62
Current:		
Accounts Receivable:		
Due from Agents, Companies, Individuals, etc., in Current Operating and Stock Accounts,	$9,339.96	
Coal and Coke sold,	16,444.13	
Cash:		
In Bank,	364.47	26,148.56
		$1,238,611.67

LIABILITIES.

Capital:		
Capital Stock,		$1,000,000.00
Deferred:		
Raton Hospital Fund,	$723.82	
Due for Board,	134.31	858.13
Auxiliary Companies:		
Due to A., T. & S. F. R.R. Co.:		
For Cash Advanced in Current Account,	$21,584.77	
For Cash Advanced “ Const'n “	100,000.00	121,584.77
Current:		
Accounts Payable:		
Due to Companies, Individuals, etc., in Current Operating and Stock Accounts,		21,116.91
Income:		
Profit for Year ending Dec. 31, 1888,	$9,487.55	
Surplus, Dec. 31, 1887,	10,564.31	
Surplus, Dec. 31, 1888,	$20,051.86	
Special Surplus:		
Sinking Fund,	75,000.00	95,051.86
		$1,238 611.67

GENERAL INCOME ACCOUNT.

For Year ending December 31, 1888.

Earnings:		
Coal: Sales,	$303,863.49	
Mining Expenses,	293,193.37	
Net Earnings from Production,		$10,670.12
Add:		
Net Receipts from Other Sources:		
Storehouse,	3,697.75	
Rents,	1,203.75	
Miscellaneous,	43.50	
Water, Loss, Dr.	47.92	4,897.08
Net Earnings of Property,		$15,567.20
Charges:		
Taxes,	399.90	
Interest to Dec. 31, 1888, on A., T. & S. F. R.R. Co. Advances,	5,679.75	6,079.65
Surplus of the Company for Year 1888,		$9,487.55

Atchison Company's interest in this property, one-half.

SCANDINAVIAN COAL AND MINING CO.

General Account, December 31, 1888.

ASSETS.

Capital:		
Cost of Property:		
Real Estate,	$9,933.33	
Equipment Account,	2,505.00	$12,438.33
Auxiliary Companies:		
Due from Auxiliaries in Current Operating and other Accounts:		
Osage Carbon Co.,		775.77
Current:		
Accounts Receivable:		
Due from Agents, Companies, Individuals, etc., in Current Operating and other Accounts,	$1,827.83	
Cash,	2,052.36	3,880.19
		$17,094.29

LIABILITIES.

Capital:				
Capital Stock,				$2,000.00
Current:				
Accounts Payable:				
Due to D. P. Gamhart in Current Account,				40.40
Income and Surplus:				
Surplus for the Year 1888,			$432.30	
Surplus, Dec. 31, 1887,		$5,325.24		
Deduct: Dividend, 1887,	$3,000.00			
Bad Debts,	543.34	3,543.34	1,781.90	
Surplus, Dec. 31, 1888,			$2,214.20	
Special Surplus:				
Surplus Account,			12,839.69	15,053.89
				$17,094.29

GENERAL INCOME ACCOUNT.

For the Year ending December 31, 1888.

Earnings:	
Coal Sold,	$31,289.40
Operating Expenses:	
Cost of Coal Mined,	27,857.11
Profit of the Company,	$3,432.31
Deduct:	
Dividend for 1888,	3,000.00
Balance of Surplus for the Year 1888,	$432.30

Atchison Company owns one-half.

ARKANSAS VALLEY ELEVATOR CO.

General Account, December 31, 1888.

ASSETS.

Capital:		
Cost of Property to Dec. 31, 1888		$97,997.07
Current:		
Cash,		17.60
Income:		
Loss for the Year 1888,	$12,266.94	
Surplus, Dec. 31, 1887,	497.07	
Deficit, Dec. 31, 1888,		11,769.87
		$109,784.54

LIABILITIES.

Capital:	
Capital Stock,	$97,500.00
Auxiliary Companies:	
Amount due to A., T. & S. F. R.R. Co.,	12,284.54
	$109,784.54

GENERAL INCOME ACCOUNT.

For Year Ending December 31, 1888.

Earnings:		
Storage,	$6,405.75	
Screenings,	248.20	
Shelling,	74.70	
Gross Earnings,		$6,728.65
Operating Expenses,		18,742.84
Net Loss,		$12,014.19
Charges:		
Taxes,		452.75
Deficit of Property,		$12,466.94
Deduct:		
Receipt from Sale of Horse,		200.00
Deficiency of Company for Year 1888.		$12,266.94

Property owned by Atchison Company.

THE ATCHISON CITY ELEVATOR CO.

General Account, December 31, 1888.

ASSETS.

Capital:		
Cost of Property to Dec. 31, 1888,		$54,393.98
Current:		
Cash:		
Boston,	$1,485.43	
Atchison,	69.96	
	$1,555.39	
Less Bank Overdraft, Atchison,	120.83	1,434.56
		$55,828.54

LIABILITIES.

Capital:		
Capital Stock,		50,000.00
Income:		
Deficit for the Year 1888,	389.78	
Surplus, Dec. 31, 1887,	6,218.32	
Surplus, Dec. 31, 1888,		5,828.54
		$55,828.54

GENERAL INCOME ACCOUNT.

For Year Ending December 31, 1888.

Earnings:		
Storage,	$6,837.49	
Sales of Grain,	1,886.91	
Screenings,	711.80	
Sale of Cobs,	240.00	
Switching,	348.00	
Gross Earnings,		$10,024.20
Operating Expenses,		10,098.08
Net Loss,		73.88
Charges: Taxes,		315.90
Deficiency of the Company for Year 1888,		$389.78

Atchison Company owns $\frac{231}{500}$ or .462 of this property.

AUXILIARY RAILROAD COMPANIES:

STATEMENT OF ROLLING STOCK, DECEMBER 31, 1888.

DESCRIPTION.	Sonora Ry. Co.	New Mex. & Ariz. R.R. Co.	Chic., S. Fe. & Cal. Ry. Co.	St. Jos., St. L. & S. Fe Ry. Co.	St. Louis, K.C. & Col. R.R. Co.	Gulf, Col. & S. Fe Ry. Co.	California Cent. Ry. Co.	California S'th'n R.R. Co.	Chic., Kan. & West'n R.R. Co.	Leav., Top. & So. W. Ry. Co.	Man., Alma & Bur. Ry. Co.	Wichita & West. R.R. Co.	King., Pratt & West. R.R. Co.	Atl. & Pac. R.R. Co.		Kansas City Belt Ry. Co.	TOTAL.
														R.R. Co.	Equipm't Company.		
LOCOMOTIVES:	17	0	17	7	3	83	14	7	8	0	2	8	0	49	46	6	267
PASSENGER CARS:																	
Coaches — First Class	3		4	3		24	7	5			2	3			15		66
Second Class	5					13								9			27
Chair						4											4
Combination,																	
Coach and Baggage				1			2	2		1		1					7
Coach, Mail, and Baggage	3					3				1							7
Baggage, Mail, and Express			2	1		18		3			1	1			4		30
Baggage and Express														4			4
Mail and Baggage														5			5
Baggage						10									4		14
Official	1					1	1							2			5
Pay	1					1											2
Tourist Sleepers															20		20
Total	13	0	6	5	0	74	10	10	0	2	3	5	0	20	43	0	191
FREIGHT CARS:																	
Box	86		950	126		1,178	10	31	100	1				197			2,679
Combination			50														50
Stock	4					200								73			277
Gondola Coal			1,500	50		150				5		10		284	905		2,904
Flat	241		300	1	52	704	43	47		25				473	200		2,086
Caboose			5	7		42			21					48	15		138
Gravel																20	20
Total	331	0	2,805	184	52	2,274	53	78	121	31	0	10	0	1,075	1,120	20	8,154
MISCELLANEOUS CARS:																	
Derrick			2					1						2			5
Pile Driver			1			2		1	2					2			8
Steam Shovel						1											1
Boarding	2							5									7
Water						25								* 113			138
Oil Tank			1														1
Snow Plough (Rotary)			1														1
Tool						5											5
Service						10											10
Total	2	0	5	0	0	43	0	7	2	0	0	0	0	117	0	0	176
GRAND TOTAL CARS	346	0	2,816	189	52	2,391	63	95	123	33	3	15	0	1,212	1,163	20	8,521

* Includes 98 Iron Tank Cars Leased from Standard Oil Co.

CONDENSED STATEMENT OF THE OPERATIONS OF THE INVESTMENT PROPERTIES OF THE ATCHISON, TOPEKA & SANTA FE R.R. CO.

OPERATIONS DURING YEAR ENDING DECEMBER 31, 1888.

LEASED AND CONTROLLED RAILROADS.

Railroad Properties leased and controlled, the Stocks of which are owned entirely by Atchison Company, either Directly or Indirectly:

	Operated Mileage Dec. 31, 1888.
Chicago, Santa Fé & California Railway (Constructing — not opened until July 1),	516.70
New Mexico & Arizona Railroad,	87.78
Sonora Railway,	262.41
St. Joseph, St. Louis & Santa Fé Railway (Acquired Feb. 1, Partially Constructing),	97.20
The St. Louis, Kansas City & Colorado R.R. (not completed),	61.40
Gulf, Colorado & Santa Fé Railway (Constructing until September),	1,058.00
California Central Railway (Constructing during period),	269.09
ROADS CONTROLLED:	
California Southern Railroad,	210.61
The Chicago, Kansas & Western Railroad (Constructing during period),	943.29
TOTAL MILEAGE, December 31,	3,506.48

The Result of Operations of these Properties during the Year to December 31, 1888, was as follows:

GROSS EARNINGS FROM TRAFFIC,	$9,234,170.21
OPERATING AND GENERAL EXPENSES,	8,024,714 75
NET EARNINGS,	$1,209,455.46
THE TOTAL OF ALL FIXED CHARGES, INCLUDING INTEREST ON BONDS, RENTALS, TAXES, ETC., WAS	4,161,698.44
NET DEFICIT AFTER FIXED CHARGES,	$2,952,242.98
OTHER RECEIPTS,	8,862.66
	$2,943,380.32
OTHER CHARGES; Interest and Discount, Etc.,	154,555.79
TOTAL DEFICIENCY,	$3,097,936.11

This Deficiency from Operations was met by Advances from Atchison Company which to the end of the period — December 31 — were repaid to the extent of $1,501,980.12 from Excess of Funds received on account of Construction.

Operations of the Investment Properties of the Atchison, Topeka & Santa Fe R.R. Co., concluded.

OTHER RAILROAD PROPERTIES OWNED JOINTLY WITH OTHER RAILROAD COMPANIES.

The Atchison Company has a joint Interest in the following Railroad Companies, which are operated separate and distinct from the A., T. & S. F. R.R., under different organizations: —

	OPERATED MILEAGE	
	TOTAL.	ONE-HALF.
Leavenworth, Topeka & South W. Ry. Co., . .	56.81	28.40
Manhattan, Alma & Burlingame Ry. Co., . . .	56.62	28.31
The Wichita & Western R.R. Co., ...	44.93	22.47
The Kingman, Pratt & Western R.R. Co., . . .	79.71	39.85
The Kansas City Belt Railway Co., ...	9.84	4.92
Atlantic & Pacific R.R. Co., ...	927.15	463.58
	1,175.06	587.53

The Result of Operations of these Properties during the Year to December 31, 1888, was as follows:

GROSS EARNINGS FROM TRAFFIC, ...	$3,418,256.02
OPERATING AND GENERAL EXPENSES, ...	3,545,664.75
NET LOSS, ...	127,408.73
THE TOTAL OF ALL FIXED CHARGES, INCLUDING INTEREST ON BONDS, RENTALS, TAXES, ETC., WAS	1,748,611.79
NET DEFICIT AFTER FIXED CHARGES, .	1,876,020.52
OTHER RECEIPTS, ...	6,430.70
	1,869,589.82
OTHER CHARGES, ...	13,411.56
TOTAL DEFICIENCY FOR YEAR 1888, .	$1,883,001.38

(ATCHISON COMPANY'S ONE-HALF, $941,500.69.)

Towards meeting its proportion of all Interest, Rental, Taxes and other Fixed Charges of these Properties, for the period to Dec. 31, the Atchison Company advanced the sum of $639,321.92, of which the amount of $550,281.92 was repaid.

*PROPERTIES, OTHER THAN RAILROADS, LEASED AND CONTROLLED, THE STOCKS OF WHICH ARE OWNED ENTIRELY BY ATCHISON COMPANY, EITHER DIRECTLY OR INDIRECTLY, AND WHICH ARE OPERATED SEPARATE AND DISTINCT.

The Canon City Coal Company.
Cherokee & Pittsburgh Coal & Mining Company.
The Osage Carbon Company.
The San Pedro Coal & Coke Company.
The Trinidad Coal & Coking Company.
Arkansas Valley Elevator Company.
The Las Vegas Hot Springs Company.

The Result to the Atchison Company of the Operations of these properties for the period to December 31, 1888, after payment of all Charges of every nature, was a **Deficit** of	† **$16,985.03**

*PROPERTIES, OTHER THAN RAILROADS, OWNED PARTLY:—

Raton Coal & Coke Company.
The Atchison City Elevator Company.
Scandinavian Coal & Mining Company.

Result of Operations for the period to December 31, 1888, Atchison Company's proportion, after payment of all Charges of every nature, was a **Surplus** of . . .	†† **$4,779.84**

* Profits from these properties are not carried into Atchison Company's books until close of year.

† This result is after deduction of $20,400.00 Dividend from Cherokee & Pittsburgh Coal & Mining Co., and San Pedro Coal & Coke Co.

†† This result is after deduction of $3,000.00 Dividend from Scandinavian Coal & Mining Co.

ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY AND SYSTEM — GENERAL.

GENERAL SUMMARY OF **OPERATED MILEAGE** OF ALL THE RAILROAD PROPERTIES AS OF DECEMBER 31, 1888.

	TOTAL MILES.	ATCHISON PROPORTION MILES.
ATCHISON, TOPEKA & SANTA FÉ R.R. AND SYSTEM PROPER,	3,024.50	3,024.50
INVESTMENT PROPERTIES.		
AUXILIARIES — ROADS LEASED AND OWNED :		
Sonora Railway,	262.41	262.41
New Mexico & Arizona R.R.,	87.78	87.78
Chicago, Santa Fé & California Ry.,	516.70	516.70
St. Joseph, St. Louis & Santa Fé Ry.,	97.20	97.20
The St. Louis, Kansas City & Colorado R.R.,	61.40	61.40
Gulf, Colorado & Santa Fé Ry.,	1,058.00	1,058.00
California Central Ry.,	269.09	269.09
AUXILIARIES — ROADS CONTROLLED :		
The Chicago, Kansas & Western R.R.,	943.29	943.29
California Southern R.R.,	210.61	210.61
TOTAL OWNED, LEASED, AND CONTROLLED,	6,530.98	6,530.98
AUXILIARIES — ROADS JOINTLY OWNED WITH OTHER R.R. COS. :		
Leavenworth, Topeka & South-western Ry.,	56.81	28.40
Manhattan, Alma & Burlingame Ry.,	56.62	28.31
The Wichita & Western R.R.,	44.93	22.47
The Kingman, Pratt & Western R.R.,	79.71	39.85
Atlantic & Pacific R.R.,	927.15	463.58
	1,165.22	582.61
The Kansas City Belt Ry. (Main Track),	9.84	4.92
TOTAL OWNED JOINTLY,	1,175.06	587.53
GRAND TOTAL OPERATED,	**7,706.04**	**7,118.51**

SUMMARY OF GENERAL

OF THE ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY AND SYSTEM, AND AND RESULT, AND SHOWING THE LATTER CLASS TO THE EXTENT UPON ITS SHARE OF CONTROL TO THE WHOLE, FOR

PROPERTIES.	Earnings.	Operating Expenses.	Net Earnings.	Net Loss.	Fixed Charges, — Taxes, Bond Interest and Rentals.
Atchison System Proper [A],	$15,612,913.25	10,387,815.10	5,225,098.15	Deduct for Int. on Bonds of other Cos.,	4,968,773 94 621,690.00 4,347,083.94
R.R. Properties Leased and Controlled whose Stocks are owned Entirely by A., T. & S. F. R.R.Co. either Directly or Indirectly. [B.]					
‖Chicago, Santa Fe & California R'y Co., .	1,731,206.40	1,266,432.67	464,773.73		909,713.69
New Mexico & Arizona R.R. Co., . .	189,163.85	137,873.49	51,290.36		‡15,743.98
Sonora Railway Co. (Limited), . . .	221 761.70	217,316.49	4,445.21		*
§St. Joseph, St. Louis & Santa Fe R'y Co.,	324,311.23	292,774.41	31,536.82		†120,515.50
St. Louis, Kan. City & Colorado R.R. Co.,	49,196.95	64,981.72		15,784.77	†113,494.68
Gulf, Colorado & Santa Fe Railway Co.,	3,249,498.31	3,082,691.19	166,807.12		1,415,008.42
California Central R'y Co., . . .	1,089,285 26	927,376.07	161,909.19		†462,363.93
California Southern R.R. Co., (a) . .	1,450,814.52	1,200,748.79	250,065.73		321,848.05
The Chicago, Kansas & West. R.R. Co., (a)	928,931.99	834,519.92	94,412.07		803,010.19
Total [B], ...	$9,234,170.21	8,024,714.75	1,225,240 23	15,784.77	4,161,698.44
Total [A and B], ...	$24,847,083.46	18,412,529.85	6,450,338.38	15,784.77	8,508,782.38
Other R.R. Properties owned Jointly with other Railroad Co.'s. [C.]					
Leavenworth, Topeka & So.-wes'n R'y Co.	36,909.16	83,077.37		46,168 21	63,726 6
Manhattan, Alma & Burlingame R'y Co.,	30,899.57	64,041.64		33,142.07	¶ 10,345.3
Wichita & Western R.R. Co., ...	86,876 86	77,961.46	8,915.40		55.178.1
Kingman, Pratt & Western R.R. Co., .	49,758 82	83,096.61		33,337.79	72,061.9
Kansas City Belt Railway Co., ...	171,423.96	72,312.89	99,111.07		94,619.0
Atlantic & Pacific R.R. Co. (Both Div'ns),	3,042,387.65	3,165,174.78		122,787.13	1,452,680.6
Total [C], ...	$3,418,256.02	3.545,664.75	108,026.47	235,435 20	1,748,611.7
Grand Total of R.R. Properties [A, B, and C], *Carried forward,*	$28,265,339.48	21,958,194.60	6,558,364.85	251,219.97	10,257,394.1

(a) Treated in this accounting as wholly owned.

* Interest accrued on Bonds owned by Atchison Company not included. The Interest ($283,500.00) on th Bonds outstanding paid by Atchison Company and charged in its Income Account.

† Includes Interest on Bonds owned by Atchison Company and used as Collateral on its issues, the amount here included being taken up as Receipts by Atchison Company, offsetting Interest on that Company's Bond so issued.

‡ No Interest charged,—Bonds owned by A., T. & S. F. R.R. Co.

¶ No Interest charged,—Bonds owned by Atchison and Union Pacific Companies.

‖ Six months' operations.

§ Eleven months' operations.

INCOME ACCOUNTS

OF ALL AUXILIARY PROPERTIES, WHOLLY AND PARTLY CONTROLLED, OF THE INTEREST OF THE ATCHISON COMPANY, BASED THE YEAR ENDING DECEMBER 31, 1888.

Profit.	Loss.	Other Receipts.	Other Charges, — Dividends, Interest on Floating Debt, etc.	S.—Surplus. D.—Deficit.	General Result to A., T. & S. F. R.R. Co.		
					PrCt. of Own'ship.	Surplus.	Deficit.
878,014.21		1,001,758.66	3,397,659.83	D. 1,517,886.96	100		$1,517,886.96
	444,939.96	3,384.75		D. 441,555.21	100		441,555.21
35,546.38				S. 35,546.38	100	35,546.38	
4,445.21				S. 4,445.21	100	4,445.21	
	88,978.68		12,094.33	D. 101,073 01	100		101,073 01
	129,279.45		60,797.05	D. 190,076.50	100		190,076.50
	1,248,201.30		80,589.62	D. 1,328,790.92	100		1,328,790.92
	300,454.74		1,074.79	D. 301,529.53	100		301,529.53
	71,782.32	5,477.91		D. 66.304.41	100		66,304.41
	708,598.12			D. 708,598.12	100		708,598.12
39,991 59	2,992,234.57	8,862.66	154.555.79	D. 3,097,936.11		Net	3,097,936.11
918,005.80	2,992 234.57	1,010,621.32	3,552,215.62	4,615,823,07		Net	4,615,823.07
	109,894.89		2,825.63	D. 112,720.52	50		56.360.26
	43 487.46	280.18		D. 43,207.28	50		21,603.64
	46,262.72	1.00		D. 46,261.72	50		23,130.86
	105,399.69		1,500.00	D. 106,899.69	50		53,449.84
4,492.03				S. 4,492.03	50	2,246.01	
	1,575,467.79	6,149.52	9,085.93	D. 1,578,404.20	50		789,202.10
4,492.03	1,880,512.55	6,430.70	13,411.56	D. 1,883,001.38		Net	941,500.69
922,497.83	4,872,747.12	1,017,052.02	3,565,627.18	D. 6,498,824.45		Net	5,557,323.76

Grand Total of R.R. Properties [A, B and C], *Brought Forward*	$28,265,339.48	21,958,194.60	6,558,364.85	251,219.97	10,257,394.17
Other Properties Leased and Controlled whose Stocks are owned Entirely by A., T. & S. F. R.R. Co. either Directly or Indirectly. [D.]					
The Canon City Coal Co., ...	$619,631.57	600,498.31	19,133.26		26,322.01
	Other	Net Earnings	13,655.73		
			32,788 99		
Cherokee & Pittsburg Coal & Mining Co.,	298,458.66	240,693.62	57,765.04		
	Other	Net Earnings	9,848.79		
			67,613.83		45,681.66
The Osage Carbon Co., ...	527,357.32	495,920.44	31,436.88		
	Other	Net Earnings	3,355.74		
			34,792.62		37,970.21
The San Pedro Coal & Coke Company, .	285,711.62	193,984.56	91,727.06		
	Other	Net Earnings	6,742.93		
			98,469 99		90,462.81
The Trinidad Coal & Coking Co., . .	275,936.27	245,910.90	30,025.37		
	Other	Net Earnings	3,153.58		
			33,178.95		11,897.90
Arkansas Valley Elevator Co., . . .	6,728.65	18,742.84		12,014.19	452.75
The Las Vegas Hot Springs Co., . .	79,223.73	114,454.83		35,231.10	3,480.00
Total [D], ...	$2,093,047.82	1,910,205.50	230,087.61	47,245.29	216,267.34
	Additional	Net Earnings	36,756.77		
			266,844 38		
Other Properties Partly Owned. [E.]					
Raton Coal & Coke Co., ...	303,863.49	293,193.37	10,670.12		
	Other	Net Earnings	4,897.08		
			15,567.20		6,079.65
Scandinavian Coal & Mining Co., . .	31,289.41	27,857.11	3,432.30		
The Atchison City Elevator Co., . .	10,024.20	10,098.08		73.88	315.90
Total [E], ...	$345,177.10	331,148.56	14,102.42	73.88	6,395.55
	Additional	Net Earnings	4,897.08		
			18,999.50		
Grand Total [D and E], . .	$2,438,224.92	2,241,354.06	244,190.03	47,319.17	222,662.89
	Additional	Net Earnings	41,653.85		
			285,843.88		
Aggregate of all Properties [A, B, C, D, and E], . . .	$30,703,564.40	24,199,548.66	6,802,554.88	298,539.14	10,480,057.06
	Additional	Net Earnings	41,653.85		
			6,844,208.73		
GRAND TOTALS,					
Atchison Company's Proportion,	$28,820,926.92				
Add Additional Earnings,	39,205.31	Operating Expenses.	Net Earn'gs.		Fixed Charges.
	Gross E'n'gs.				
	$28,860,132.23	22,260,218.27	$6,599,913.96		$9,602,541.39

INCOME ACCOUNTS (*Concluded*).

						Surplus	Deficit
922,497.83	,872,747.12	1,017,052.02	3,565,627.18	D. 6,498.824.45		Net	5,557,323.76
6,466.98			529.83	S. 5,937.15	100	5,937.15	
21,932.17			12,000.00	S. 9,932.17	100	9,932.17	
	3,177.59		4,522.26	D. 7,699.85	100		7,699.85
8,007.18			2,400.00	S. 5,607.18	100	5,607.18	
21,281.05			1,064.69	S. 20,216.36	100	20,216.36	
	12,466 94	200.00		D. 12,266.94	100		12,266.94
	38,711.10			D. 38,711.10	100		38,711.10
57,687.38	54,355.63	200.00	20,516.78	D. 16,985.03			Net 16,985.03
9,487.55				S. 9,487.55	.50	4,743.77	
3,432.30			3,000.00	S. 432.30	.50	216.15	
	389.78			D. 389.78	.462		180.08
12,919.85	389.78		3,000.00	S. 9,530.07		Net 4,779.84	
70,607.23	54,745.41	200.00	23,516.78	D. 7,454.96			Net 12,205.19
993,105.06	4,927,492.53	1,017,252.02	3,589,143.96	D. 6,506,279.41			Net Deficit. $5,569,528.95
	Net Loss. $3,002,627.43	Other Receipts. $1,014,036.67	Other Charges. $3,580,937.58	Net Deficit. $5,569,528.95			

ATCHISON, TOPEKA & SANTA FE RAILROAD CO. AND SYSTEM, AND AUXILIARY COMPANIES.

GENERAL STATEMENT OF MATERIAL, STORES, AND FUEL ON HAND.

December 31, 1888.

	TOTAL.	A., T. & S. F. PROPOR'N.	INTEREST OF A., T. & S. F. R.R. CO.
Atchison, Topeka & Santa Fé R.R. Co. & System Proper, ...	$1,424,756.21		$1,424,756.21
Chicago, Santa Fé & Cal. R'y Co., . .	340,099.12		340,099.12
St. Joseph, St. Louis & Santa Fé R'y Co.,	3,765.73		3,765.73
The St. Louis, Kansas City & Colorado R.R. Co., ...	16,893.43		16,893.43
New Mexico & Arizona R.R. Co., . .	2,784.68		2,784.68
Sonora Railway Co., ...	57,579.85		57,579.85
Gulf, Colorado & Santa Fé R'y Co., . .	280,676.51		280,676.51
California Central R'y Co., ...	*.		. . . .
California Southern R.R. Co., . . .	480,396.75		480,396.75
The Chicago, Kansas & Western R.R. Co.,	†. . . .		. . . .
Leavenworth, Topeka & S. W. R'y Co.,	†. . . .		. . . .
Manhattan, Alma & Burlingame R'y Co.,	†. . . .		. . . .
The Wichita & Western R.R. Co., . .	1,367.18	½	683.59
The Kingman, Pratt & Western R.R. Co., ...	509.10	½	254.55
Atlantic & Pacific R.R. Co., ...	245,502.35	½	122,751.17
The Kansas City Belt R'y Co., . . .	8,261.02	½	4,130.51
The Las Vegas Hot Springs Co., . . .	12,081.05		12,081.05
The Cañon City Coal Co., ...	‡42,271.22		42 271.22
Cherokee & Pittsburgh Coal & Mining Co.	‡15,850.91		15,850.91
The Osage Carbon Company, ...	‡14,661.13		14,661.13
The San Pedro Coal & Coke Co., . .	‡19,660.19		19,660.19
The Trinidad Coal & Coking Co., . .	‡7,785.55		7,785.55
Arkansas Valley Elevator Co., . . .	None.		. . . .
Raton Coal & Coke Co., ...	‡12,746.62	½	6,373.31
The Atchison City Elevator Co., . .	None.		. . . .
Scandinavian Coal & Mining Co., . .	None.		. . . .
Gross Amount, ...	$2,987,648.60		
Direct and Indirect Interest of A., T. & S. F. R.R. Co., ...			**$2,853,455.46**

---

*Account kept with Cal. South. R.R. Co. †Account kept with A., T. & S. F. R.R.Co.

‡Stock, Merchandise, etc., in Stores.

ABSTRACT OF GROSS AND NET FLOATING DEBT

AS OF DECEMBER 31, 1888.

ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY AND SYSTEM-PROPER.

CURRENT AND ACCRUING LIABILITIES.

ACCOUNTS PAYABLE:			
Due to Companies, Individuals, etc., in Current Operating and Traffic Accounts,	$1,948,614.22		
BILLS PAYABLE,	4,605,161.43*		
BOND INTEREST COUPONS:			
Due January 1, 1889, and past due,	583,052.00		
DIVIDENDS:			
Past due, and not claimed,	23,699.75		
SCRIP CERTIFICATES:			
Issued, not yet presented,	195.00	$7,160,722.40	
FOR ACCRUING OBLIGATIONS pertaining to Operations of the period, but not due nor payable until from January to June, 1889, namely:			
Interest on Bonds, Guarantee Notes, and Rentals,	899,604.57		
Taxes (Balance unpaid),	14,672.64		
Sinking Fund Requirements,	1,060.00	915,337.21	
GROSS DEBT, originating to Dec. 31,		$8,076,059.61	
OFFSETS, namely:—			
ACCOUNTS RECEIVABLE:			
Due from Agents, Companies, Individuals, U.S. Gov't, and others in Current Operating and Traffic Accounts,	1,862,292.23		
BILLS RECEIVABLE,	2,129.59		
CASH ON HAND,	1.415,494.04		
GUARANTEE FUND NOTES, subscribed for, but not yet called,	4,200,000.00	7,479,915.86	
EXCESS OF LIABILITIES,			$596,143.75

NOTES.—1. The Company had on hand as of December 31, MATERIAL AND SUPPLIES, to be used in Operations, amounting in value to $1,424,756.21, which had not been included in above, but which should be considered as that amount expended towards Operations subsequent to December 31, and hence as an offset to requirements to be then developed.

In other words, provision is made, through this MATERIAL being in stock, for reduction of payments for Operating Expenses arising subsequent to December 31.

* $2,424,238.62 paid to March 31, 1889.

2. THE DEBT ABOVE SHOWN WAS AND IS DUE AND PAYABLE AS FOLLOWS:—

JANUARY, 1889:		
Accounts Payable, Wages, etc.,	$1,948,614.22	
Taxes,	14,672.64	
Bills Payable,	1,787,224.76	
Bond Interest, Coupons, Dividends, etc.,	606,946.75	
		$4,357,458.37
OFFSETS:		
Cash and Accounts, and Guarantee Fund Notes,		7,479.915.86
SURPLUS OF CURRENT ASSETS,		$3,122,457.49
FEBRUARY TO JUNE, 1889.		
ACCRUING OBLIGATIONS, not due until from February until June, 1889,	900,664.57	
Bills Payable from February until June, 1889,	2,817,936.67	3,718,601.24
Excess of Liabilities, Atchison System-Proper as above,		$596,143.75

Abstract of Gross and Net Floating Debt, continued.

INVESTMENT, OR AUXILIARY PROPERTIES.

LEASED AND CONTROLLED RAILROADS:

On December 31, 1888, the Excess of Current Liabilities of these Properties over their Immediately Available Current Cash Assets, largely incurred in Construction and including all Interest, Rentals, Taxes, etc., Accrued to that date, but not due nor payable until January 1889 to June 1889, inclusive, was (not including as an offset $1,182,196.07 of Material and Supplies on Hand)	$1,483,121.64

OTHER RAILROAD PROPERTIES OWNED JOINTLY:

The Excess including Accruing Accounts not due, was (Atchison Company's Proportion) (not including as an offset $127,819.82 of Material and Supplies on Hand)	330.622.36
Total Net Excess of Leased, Controlled, and Joint Railroads, .	$1,813,744.00

PROPERTIES, OTHER THAN RAILROADS:

The Surplus of Immediate Cash Assets over Current Liabilities, including all Accruing obligations (excluding Material and Supplies, $118,683.36), as of December 31, 1888, was . . .	36,693.74
Total Net Excess of Current Liabilities of all Investment Properties, not including Material on Hand, as an offset, and not due nor payable until January 1889, to June 1889, was	**$1,777,050.26**

Abstract of Gross and Net Floating Debt, concluded.

RECAPITULATION: NET FLOATING DEBT.

ATCHISON, TOPEKA & SANTA FE R.R. CO., AND OF INVESTMENT PROPERTIES, DECEMBER 31, 1888.

Direct.		
Atchison, Topeka & Santa Fe R.R. Co. and System Proper,		$596,143.75
Indirect.		
Investment Properties, Leased and Controlled Railroads,	$1,483,121.64	
Contingent.		
Investment Properties, Railroads owned jointly,	330,622.36	
	$1,813,744.00	
Deduct.		
SURPLUS of Properties other than Railroads,	36,693.74	1,777,050.26
Balance Net Excess of Current Liabilities (excluding Material),		**$2,373,194.01**

Summary of Material and Stores on Hand not used as Offsetting the above.			
Atchison, Topeka & Santa Fé R.R. Co. and System Proper,	$1,424,756.21		
INVESTMENT PROPERTIES:			
Leased and Controlled Railroads,	1,182,196.07		
Jointly owned Railroads,	127,819.82		
Properties other than Railroads,	118,683.36		
Aggregate Material on Hand not used as Offsetting Net Floating Debt, but Providing for Operations subsequent to December 31, Direct, Indirect, and Contingent.			
Interest of Atchison Company,		$2,853,455.46	
Current Investments of Atchison Company, Unpledged.			
Bonds and Stocks of Sundry Properties in Treasury, and available as Collateral or Disposal, Par, $6,539,946.62 @ Cost,		4,000,936.71	
Investments of Companies owned by Atchison Company, Unpledged. Par, $7,764,775.76 @ Cost,		5,887,977.52	
Aggregate Available Reserve of Unpledged Securities; and of Material on Hand in the Reduction of Payments for Expenses in Operations subsequent to December 31, of the			
A., T. & S. F. R.R. Co. and System Proper, and of Investment Railroad, and other Properties, @ Cost,			$12,742,369.69
Surplus of Resources over Net Floating Debt December 31, 1888, @ Par, $14,784,983.83.		@ Cost,	**$10,369,175.68**

GENERAL STATEMENT SHOWING **MILEAGE AND NET EARNINGS FROM OPERATIONS** OF THE ATCHISON, TOPEKA & SANTA FE RAILROAD CO.'S SYSTEM—PROPER AND OF ITS AUXILIARY OR INVESTMENT RAILROAD PROPERTIES FOR THE YEARS 1887 AND 1888.

PROPERTIES.	1887.		1888.	
	AVERAGE MILEAGE.	NET EARNINGS.	AVERAGE MILEAGE.	NET EARNINGS.
ATCHISON, TOPEKA & SANTA FE R.R. CO.'S SYSTEM PROPER,	2,622.40	$8,604,075.19	3,020.17	$5,225,098.15
Investment Railroad Properties:				
Railroads Leased, Owned, and Controlled,	2,143.61	2,145,801.46	3,402.14	1,209,455.46
Railroads Jointly Owned with Other Railroad Companies (Atchison Co.'s One-half),	576.13	204,710.24	587.53	† 63,704.36
TOTALS,	5,342.14	$10,954,586.89	7,009.84	$6,370,849.25

	DEC. 31, 1887.	DEC. 31, 1888.
ACTUAL MILEAGE,	6,320.63	7,118.51

† Loss.

ATCHISON, TOPEKA & SANTA FE RAILROAD COMPANY'S SYSTEM–PROPER AND AUXILIARIES.

STATEMENT OF FIXED CHARGES FOR INTEREST ON BONDS OUTSTANDING, SINKING FUNDS, TAXES, AND RENTALS FOR YEAR 1889

PARTLY ESTIMATED.

EXCLUSIVE OF BONDS IN THE TREASURY AND BONDS USED AS COLLATERAL FOR BONDS INCLUDED HEREIN.

Direct Charges against Income of the Atchison System Proper.

BONDS OF THE ATCHISON, TOPEKA, & SANTA FE R.R. CO.	DATES OF BONDS.	WHEN PAYABLE.	AMOUNTS OF BONDS.		INTEREST.			SINKING FUND.		NAME OF TRUSTEE OR TRUSTEES.
			Authorized.	Outstanding	Rate.	Annual Interest.	When Payable.	Approximate Annual Amts.	When Payable.	
First Mortgage, Gold	July 1, 1869	July 1, 1899	$15,000 p. mile.	$7,041,000.00	7	$492,870.00	Jan. and July.			O. W. Peabody and Emmons Raymond.
Consolidated Mortgage, Gold . .	April 1, 1873	April 1, 1903	7,500 "	108,500.00	7	7,595.00	Apr. and Oct.			F. H. Peabody and S. L. Thorndike.
Five Per Cent. Bonds *	April 1, 1880	April 1, 1909	1,185,000	940,000.00	5	47,000.00	Apr. and Oct.	$35,950.00	Ap. 1 & Oc. 1	New England Trust Co., Boston.
Sinking Fund Five Per Cent. Bonds,	Sept. 1, 1880	Sept. 1, 1920	3,775,000	3,444,000.00	5	172,200.00	Mar. and Sept.	37,000.00	Sept. 1.	S. L. Thorndike, N. Thayer & G. P. Gardner
Four and a Half Per Cent. Sinking Fund Bonds *	Oct. 1, 1880	Oct. 1, 1920	5,500,000	4,532,000.00	4½	203,940.00	Apr. and Oct.	77,000.00	Oct. 1.	Boston Safe Deposit and Trust Co.
Six Per Cent. Sinking Fund Secured Bonds *	Dec. 1, 1881	Dec. 1, 1911	15,000,000	14,277,000.00	6	856,620.00	June and Dec.	143,000.00	Dec. 24.	do. do. do.
Collateral Trust Five Per Cent. Bonds, Gold *	Feb. 1, 1887	Feb. 1, 1937	15,000,000	15,000,000.00	5	‡750,000.00	Feb. and Aug.			do. do. do.
Guaranteed Fund Notes	Nov. 1, 1888	Nov. 1, 1891	10,000,000	§7,000,000.00	6	420,000.00	May and Nov.			do. do. do.
NOTE.—Bonds marked * are secured by Mortgage Bonds of Leased and Auxiliary Roads.				$52,342,500.00		$2,950,225.00		$292,950.00		
Land Grant Mortgage, Gold (Principal and Interest payable from Land Receipts).	Nov. 1, 1870	Oct. 1, 1900	$7,500 per mile.	$2,311,500.00	7	$161,805.00	Apr. and Oct.			Geo. C. Lord.

‡ Of the Interest on the Collateral Trust 5s, $537,400.00 is on account of bonds issued for auxiliary roads whose earnings and expenses are not included with those of the Atchison Co.
§ Issued January, 1889, $2,800,000.00: to be issued in all, $7,000,000.00.

BONDS OF LEASED ROADS OPERATED AS PART OF THE ATCHISON SYSTEM.
Direct Charges Against Income of Atchison System Proper.

Bonds of Leased Roads on which Interest is Payable by the Atchison Company as and for Rental. The Principal and Interest of Bonds marked † are guaranteed by the Atchison Company.	Dates of Bonds	When Payable.	Amounts of Bonds.		Interest.			Sinking Funds.		Name of Trustee or Trustees.
			Authorized.	Outstanding	Rate.	Annual Interest.	When Payable.	Approximate Annual Amts.	When Payable.	
Cowley, Sumner & Fort Smith R.R. Co. First Mortgage, Gold † . .	Oct. 1, 1879	Oct. 1, 1909	$8,000 p. mile.	$798,000.00	7	$55,860.00	Apr. and Oct.			Warren Sawyer and Pliny Nickerson.
Florence, Eldorado & Walnut Valley R.R. Co. First Mortgage, Gold .	Aug. 1, 1877	Aug. 1, 1907	10,000 "	775,000.00	7	54,250.00	Apr. and Oct.			Geo. C. Lord and Pliny Nickerson.
Kansas City, Emporia & Southern R.R. Co. First Mortgage, Gold † .	July 1, 1879	July 1, 1909	8,000 "	532,000.00	7	37,240.00	Jan. and July.			Chas. C. Burr.
Kansas City, Topeka & Western R.R. Co. First Mortgage, Gold	Nov 1, 1875	July 1, 1905	13,000 "	854,000.00	7	59,780.00	Jan. and July.			F. H. Peabody.
Kansas City, Topeka & Western R.R. Co. Income Bonds, Gold † . .	Nov. 1, 1875	Mar. 1, 1906	4,600 "	200,000.00	7	14,000.00	Mar. and Sept.			L. G. Pratt.
Marion & McPherson R.R. Co. First Mortgage, Gold †	Oct. 1, 1879	Oct. 1, 1909	7,000 "	713,000.00	7	49,910.00	Apr. and Oct.			Geo. B. Wilbur and S. S. Sleeper.
New Mexico & Southern Pacific R.R. Co. First Mortgage, Gold † . .	April 1, 1879	April 1, 1909	15,000 "	4,425,000.00	7	309,750.00	Apr. and Oct.			Warren Sawyer and Chas. C. Burr.
Pueblo & Arkansas Valley R.R. Co. First Mortgage, Gold † . . .	Nov. 1, 1875	July 1, 1905	14,000 "	1,633,000.00	7	114,310.00	Jan. and July.			Isaac T. Burr, Geo. B. Wilbur & Alden Speare
Pueblo & Arkansas Valley R.R. Co. First Mortgage, Gold † . . .	Oct. 1, 1878	July 1, 1905		2,082,000.00	7	145,740.00	Jan. and July.			do. do. do.
Wichita & South-western R.R. Co. First Mortgage, Gold. Int. guar'd,	July 1, 1872	July 1, 1902	15,000 "	412,000.00	7	28,840.00	Jan. and July.			O. W. Peabody and Emmons Raymond.
				$12,424,000.00		$869,680.00				

BONDS OF THE SOUTHERN KANSAS R'Y SYSTEM, LEASED AND NOW OPERATED AS PART OF THE ATCHISON SYSTEM.
Direct Charges Against Income of Atchison System Proper.

The Interest on these Bonds is Payable by the Atchison Co. as and for Rental.	Dates of Bonds.	When Payable.	Amounts of Bonds.		Interest.			Sinking Funds.		Name of Trustee or Trustees.
			Authorized.	Outstanding	Rate.	Annual Interest.	When Payable.	Annual Amounts.	When Payable.	
Kansas City, Lawrence & Southern R.R. Co. First Mortgage . .	April 1, 1879	April 1, 1909	$2,940,000	$2,940,000.00	6	$176,400.00	April and Oct.			N. Thayer, F. Bartlett and James H. Blake
Southern Kansas & Western R.R. Co. First Mortgage	Jan. 1, 1880	Jan. 1, 1910	2,500,000	1,605,000.00	7	112,350.00	Jan. and July.	$31,036.57	Nov. 1.	N. Thayer, F. Bartlett and James H. Blake
Sumner County R.R. Co. First Mortgage	Sept. 1, 1880	Sept. 1, 1910	300,000	194,000.00	7	13,580.00	Mar. and Sept.	9,900.00	Aug. 31.	N. Thayer, C. Merriam and James H. Blake
Ottawa & Burlington R.R. Co. First Mortgage	April 1, 1881	April 1, 1909	12,000 p. mile	500,000.00	6	30,000.00	April and Oct.			Boston Safe Deposit and Trust Co.
The Southern Kansas Railway Co., Gulf Division. First Mortgage. Gold. Principal and interest guaranteed by Atchison Co. .	Sept. 1, 1886	Sept. 1, 1926	16,000 p. mile	4,336,000.00	5	216,800.00	Mar. and Sept.			A. F. Luke, G. A. Nickerson & J. Q. Bennett
The Southern Kansas Railway Co. Income Bonds	July 1, 1887	July 1, 1927	4,000 p. mile	1,480,000.00	6	88,800.00	May 1.			A. F. Luke, G. A. Nickerson & J. Q. Bennett
				$11,055,000.00		$637,930.00		$40,936.57		
The Southern Kansas Railway Co. of Texas. First Mortgage, Gold. Principal and interest guaranteed by Atchison Co. . . .	Mar. 1, 1887	Mar. 1, 1927	$16,000 p. mile	1,583,000.00	5	79,150.00	Mar. and Sept.			A. F. Luke, G. A. Nickerson & J. Q. Bennet
				$12,638,000.00		$717,080.00		$40,936.57		

BONDS OF AUXILIARY ROADS WHOSE EARNINGS AND EXPENSES ARE NOT INCLUDED WITH THOSE OF THE ATCHISON COMPANY.

Indirect Charges against Atchison Company.

Bonds of Auxiliary Roads.	Dates of Bonds.	When Payable.	Amounts of Bonds.		Interest.			Sinking Funds.		Name of Trustee or Trustees
			Authorized.	Outstanding.	Rate.	Annual Interest.	When Payable.	Approximate Annual Amts.	When Payable.	
Atchison, Topeka & Santa Fe Railroad Co. in Chicago. First Mortgage (Terminal), Gold. Principal and interest guaranteed by Atchison Co., ...	July 1, 1887	Jan. 1, 1937	$10,000,000.00	$5,500,000.00	5	$275,000.00	Jan. and July.			Boston Safe Deposit and Trust Co.
Chicago, Santa Fe & California Railway Co. First Mortgage, Gold. Principal and interest guaranteed by Atchison Co., . .	Jan. 1, 1887	Jan. 1, 1937	35,000 p. mile	15,350,000.00	5	767,500.00	Jan. and July.			Boston Safe Deposit and Trust Co.
Chicago & St. Louis Railway Co. First Mortgage. Not guaranteed by Atchison Co.	Mar. 1, 1885	Mar. 1, 1915	10,000 "	1,500,000.00	6	90,000.00	Mar. and Sept.			The Farmer's Loan and Trust Co., New York.
California Southern Railroad Co. First Mortgage, Gold. Principal and interest guaranteed by Atchison Co., ...	Jan. 1, 1886	Jan. 1, 1926	10,000 "	2,081,000.00	6	124,860.00	Jan. and July.	$25,000.00	May 15.	Boston Safe Deposit and Trust Co.
Chicago, Kansas & Western Railroad Co. First Mortgage, Gold. Principal and interest guaranteed by Atchison Co., ...	June 1, 1886	June 1, 1926	14,000 "	13,284,000.00	5	664,200.00	June and Dec.			A. F. Luke, G. A. Nickerson & J. Q. Bennett.
Gulf, Colorado & Santa Fe Railway Co. First Mortgage, Gold. Principal and interest assumed by the Atchison Co., ...	July 1, 1879	July 1, 1909	12,000 "	12,696,000.00	7	888,720.00	Jan. and July.			John S. Kennedy and Charles M. Fry.
Gulf, Colorado & Santa Fe Railway Co. Second Mortgage, Gold. Principal and interest assumed by the Atchison Co., ...	June 15, 1885	Oct. 1, 1923	8,000 "	8,064,000.00	6	483,840.00	April and Oct.			The Farmer's Loan and Trust Co., New York.
Sonora Railway Co. Limited. First Mortgage, Gold. Interest guaranteed by Atchison Co., . .	Jan. 1, 1880	Jan. 1, 1910	20,000 "	4,050,000.00	7	283,500.00	Jan. and July.			Thomas Nickerson and Isaac T. Burr.
				$62,525,000.00		$3,577,620.00		$25,000.00		
TOTAL OF ALL THE FOREGOING. EXCLUSIVE OF LAND GRANT MORT.				$139,929,500.00		$8,114,605.00		$358,886.57		
INCOME BONDS.—THE INTEREST OF WHICH IS NON-CUMULATIVE AND PAYABLE ONLY WHEN EARNED.										
California Southern Railroad Co., .	Mar. 1, 1886	Mar. 1, 1926	$3,505,000.02	$3,494,000.00	6	209,640.00	Mar. and Sept.	$50,000.00		Boston Safe Deposit and Trust Co.
Chicago, Kansas & Western R.R. Co.	June 1, 1886	June 1, 1926	7,000 p. mile	6,510,500.00	6	390,630.00	May. 1.			A. F. Luke, G. A. Nickerson & J. Q. Bennett.
				$10,004,500.00		$600,270.00		$50,000.00		

(p. 165.)

BONDS OF ROADS OWNED OR CONTROLLED JOINTLY WITH OTHER RAILROAD COMPANIES.

Contingent Liabilities of the Atchison Company.

BONDS OF ROADS OWNED OR CONTROLLED JOINTLY WITH OTHER RAILROAD COMPANIES.	DATES OF BONDS.	WHEN PAYABLE.	AMOUNTS OF BONDS.		INTEREST.			SINKING FUNDS.		NAME OF TRUSTEE OR TRUSTEES.
			Authorized.	Outstanding	Rate.	Annual Interest.	When Payable.	Approximate Annual Amts.	When Payable.	
Leavenworth, Topeka & Southwestern Railway Co. General Mortgage, Gold. Total issue, $1,380,000.00. Principal and interest of $690,000.00 of the Bonds guaranteed by Atchison Co.,	June 1, 1882	July 1, 1912	$1,500,000.00	$690,000.00	4	$27,600.00	Jan. and July.			American Loan and Trust Co., Boston.
Wichita & Western Railroad Co. First Mortgage. Principal and interest of all the bonds guaranteed by Atchison Co. Property being jointly owned, one-half the amount is here stated, . . .	Jan. 1, 1884	Jan. 1, 1914	25,000 p. mile	395,500.00	6	23,730.00	Jan. and July.			Boston Safe Deposit and Trust Co.
Kingman, Pratt & Western Railroad Co. First Mortgage. Principal and interest of all the bonds guaranteed by Atchison Co. Property being jointly owned, one-half the amount is here stated, . .	July 1, 1886	July 1, 1916	25,000 "	478,000.00	6	28,680.00	Jan. and July.			Boston Safe Deposit and Trust Co.
Atlantic & Pacific Railroad Co. Guaranteed Trust Gold Bonds. Total issue, ¶ $17,604,000.00. Principal and interest guaranteed severally, but not jointly, each one-half by the Atchison and St. Louis & San Francisco C'panies.	Jan. 1, 1887	Jan. 1, 1937	20,000,000.00	8,802,000.00	4	352,080.00	Jan. and July.			The Mercantile Trust Co., New York.
Atlantic & Pacific Railroad Co., Central Division. First Mortgage, Gold. Not guaranteed by Atchison Co. One-half	Nov. 1, 1871	Nov. 1, 1891	30,000 p. mile	594,500.00	6	35,670.00	May and Nov.			Chas. F. Choate and Frederick L. Ames.
Atlantic & Pacific Railroad Co. Second Mortgage, Gold. Total issue, $5,600,000.00. Principal and interest guaranteed severally, but not jointly, each one-half by the Atchison and St. Louis & San Francisco Companies, . . .	Sept. 1, 1887	Sept. 1, 1907	10,000 "	2,800,000.00	6	168,000.00	Mar. and Sept.	††		The Mercantile Trust Co., New York.
				$13,760,000.00		$635,760.00				

¶ Includes $24,000.00 deposited with Mercantile Trust Co., New York, to be exchanged for the Western Division, First Mortgage 6% Bonds outstanding.

†† The yearly Sinking Fund of $105,000.00 does not commence until March 1, 1890.

MEMORANDUM STATEMENT OF TAXES AND RENTALS FOR YEAR 1889.

	TOTAL.		Proport'n.	A., T. & S. F. R.R. CO. AMOUNT.	
	Taxes.	Rentals.		Taxes.	Rentals.
Direct:					
A., T. & S. F. R.R. & Sys. Proper,	$670,000.00	Cr.$36,000.00*		$670,000.00	Cr.$36,000.00
Indirect:					
A., T. & S. F. R.R. in Chicago, .	10,000.00			10,000.00	
Chicago, S. Fe & Cal. R'y Co., .	88,000.00	†248,250.00		88,000.00	248,250.00
California Southern R.R. Co., .	36,000.00	‡28,750.00		36,000.00	28,750.00
California Central R'y Co., . .	36,000.00			36,000.00	
The Chicago, Kansas & Western R.R. Co., ...	180,000.00			180,000.00	
St. Joseph, St. Louis & Santa Fe R'y Co., ...	11,000.00			11,000.00	
The St. Louis, Kansas City & Col. R.R. Co., ...	4,486.00	32,000.00		4,486.00	32,000.00
Gulf, Col. & Santa Fe R'y Co., .	80,000.00			80,000.00	
New Mexico & Arizona R.R. Co.,	16,000.00			16,000.00	
Sonora Railway Co., ...	5,248.00			5,248.00	
Total **Indirect,**	466,734.00	309,000.00		466,734.00	309,000.00
Total **Direct** and **Indirect,**	1,136,734.00	273,000.00		1,136,734.00	273,000.00
Contingent:					
Leav., Top. & So. W. R'y Co., .	11,000.00	7,000.00	½	5,500.00	3,500.00
The Wichita & Western R.R. Co.,	7,700.00		½	3,850.00	
The Kingman, Pratt & Western R.R. Co., ...	14,700.00		½	7,350.00	
Manhattan, Alma & Burlingame R'y Co., ...	10,000.00		½	5,000.00	
Atlantic & Pacific R.R. Co., . .	120,000.00	436,266.00 14,000.00	½	60,000.00	218,133.00 7,000.00
The Kansas City Belt R'y Co., .	5,000.00		½	2,500.00	
Total Contingent, ...	168,400.00	457,266.00		84,200.00	228,633.00
AGGREGATE:					
Direct, Indirect, and **Contingent,**	$1,305,134.00	$730,266.00		$1,220,934.00	$501,633.00

*Rentals Receivable, Due A., T. & S. F. R.R. Co.:

From St. Louis & S. Francisco R'y Co., ...	$8.000.00
Atlantic & Pacific R.R. Co., ...	14,000.00
Leav., Top. & S. W. R'y Co., ...	7,000.00
Colorado & Midland R.R. Co., ...	7,000.00
	$36,000.00

†$39,000 Annual Payment to A., T. & S. F. R.R. Co. not included.

‡Yearly amount $69.000. Contract with So. Pac. Co. terminates May 24, 1889.

SUMMARY OF FIXED CHARGES FOR INTEREST ON BONDS, SINKING FUNDS, TAXES, AND RENTALS FOR YEAR 1889.

ATCHISON COMPANY'S PROPORTION.

	Interest on Bonds.	Sinking Funds.	Taxes.	Rentals.	Totals.
Direct:					
A., T. & S. F. R.R. Co. and System Proper (omit'ng Inter'st on Land Grant Mortgage Bonds payable from land receipts, $161,805.00),	$4,536,985.00	$333,886.57	$670,000.00	§$36,000.00	$5,504,871.57
Indirect:					
Auxiliary Companies Leased and Controlled by A., T. & S. F. R.R. Co., ...	3,577,620.00	25,000.00	466,734.00	309,000.00	4,378,354.00
Contingent:					
Roads owned jointly with other Companies, A., T. & S. F. R.R. Co.'s *liability* as *guarantor* one-half, ...	635,760.00		84,200.00	228,633.00	948,593.00
Grand Totals, . . .	$8,750,365.00	358,886.57	1,220,934.00	501,633.00	10,831,818.57

Add — Direct:

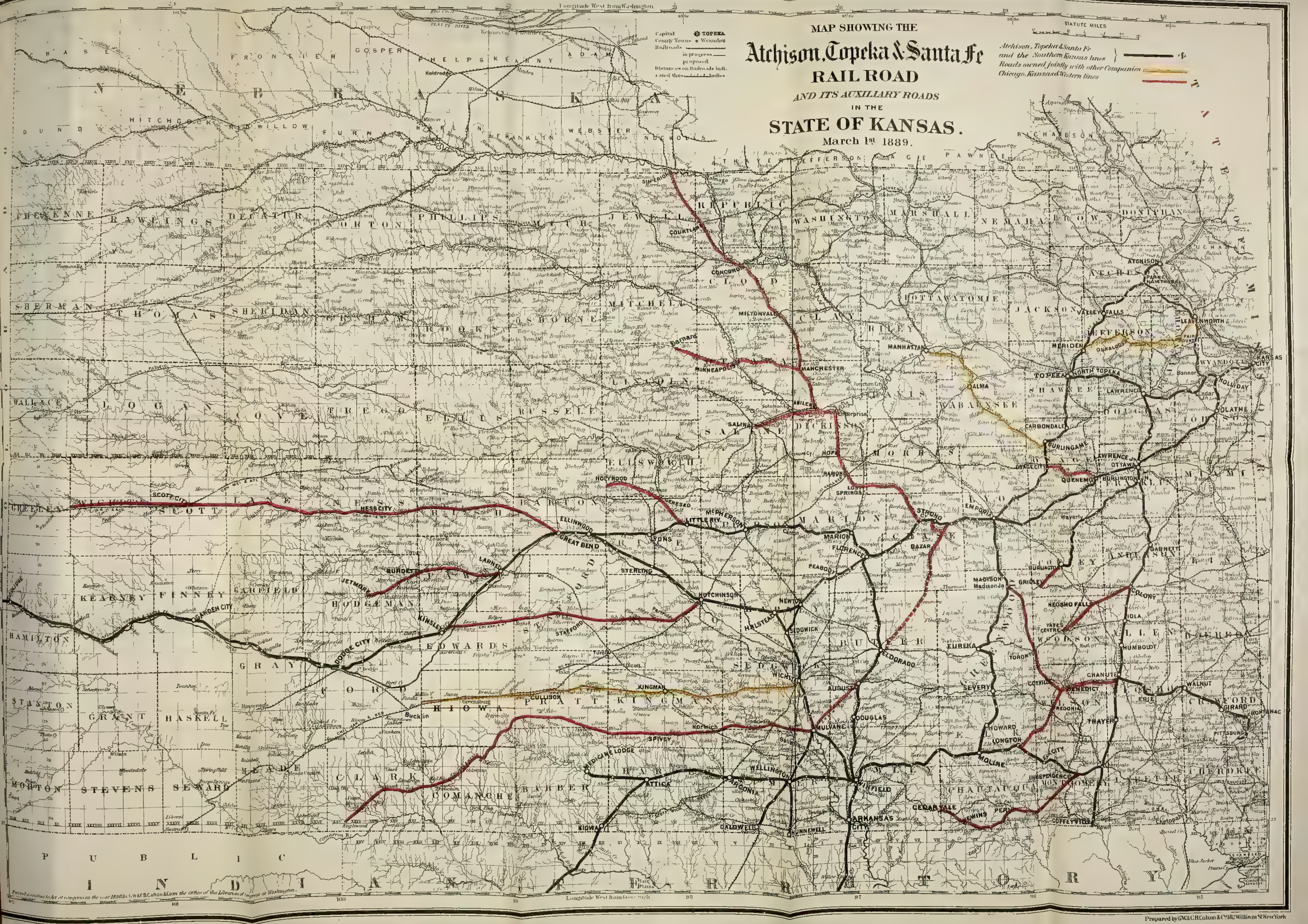
Interest on Equipment Lease Warrants, 6% on $1,445,660, ... 86,739.60

Aggregate of all Charges, ... **$10,918,558.17**

---

§ Credit.

CALIFORNIA STATE LIBRARY



MAP SHOWING THE

Atchison, Topeka & Santa Fe

RAIL ROAD

AND ITS AUXILIARY ROADS

IN THE

STATE OF KANSAS.

March 1st 1889.

Capital ✪ TOPEKA
County Towns ● Wyandott
Railroads
in progress
proposed
Distances on Railroads indicated thus miles
STATUTE MILES
Atchison, Topeka & Santa Fe and the Southern Kansas lines
Roads owned jointly with other Companies
Chicago, Kansas & Western lines
Longitude West from Washington
Longitude West from Greenwich
N E B R A S K A
P U B L I C
I N D I A N T E R R I T O R Y
TOPEKA
ATCHISON
LEAVENWORTH
KANSAS CITY
WICHITA
DODGE CITY
HUTCHINSON
EMPORIA

Entered according to Act of Congress in the year 1886 by G.W. & C.B. Colton & Co. in the Office of the Librarian of Congress at Washington.

Prepared by G.W. & C.B. Colton & Co. 182 William St. New York

8

ARGUMENT

OF

FRANKLIN B. GOWEN, Esq.,

DELIVERED BEFORE

The Interstate Commerce Commission,

Washington, D. C., January 17th, 1888,

IN THE CASES OF

George Rice *vs.* The Railroad Companies:

KNOWN AS

THE STANDARD OIL MONOPOLY CASES.

Railways, Transportation.

Stenographically Reported by J. J. Linney.

PUBLISHED BY GEORGE RICE, MARIETTA, OHIO.

PHILADELPHIA:
ALLEN, LANE & SCOTT, PRINTERS.
229-231-233 South Fifth Street.
1888.

CALIFORNIA STATE LIBRARY

ARGUMENT OF FRANKLIN B. GOWEN, ESQ., DELIVERED BEFORE THE INTERSTATE COMMERCE COMMISSION, WASHINGTON, D. C., JANUARY 17TH, 1888, IN THE CASES OF GEORGE RICE *vs.* THE RAILROAD COMPANIES.

May it please your Honors, the petroleum traffic of the United States is one of the large productive industries of the country. Oil is found in Pennsylvania, in New York, in Ohio, and West Virginia, and there are evidences that deposits may also be found in other States. The volume of the business has already grown to twenty-seven million barrels a year. This represents a weight of four million tons, or about three times the weight of the entire cotton crop of the United States. The production of crude oil was last year about sixty-two thousand barrels a day. The shipments were seventy-four thousand barrels a day. Four or five years ago the production exceeded eighty thousand barrels a day, though the shipments were but sixty thousand. The difference between the daily production and daily shipments was accumulated for several years in large tanks, and this excess of production, three or four years ago, had reached thirty-nine millions of barrels stored in tanks upon the surface of the ground.

This surplus production is now being reduced by ten or twelve thousand barrels a day, and last year the shipments from the oil regions of the United States amounted to seventy-four thousand barrels a day, to over twenty-seven million barrels a year, say to about four million tons of weight per annum for the railroad companies to transport.

Now, if the Commission please, there is proved in this case the fact that we have this product of great national importance produced in several States, entering largely into the domestic and foreign commerce of this country, and that the right to manufacture and transport it is controlled to the extent of at least eighty per cent. by one single manufacturing firm or corporation or trust. How was such a monopoly obtained? There is but one way in which a product of such magnitude not owned by a manufacturer can be controlled by him in the

United States, and that is by unjust railway discrimination. The records of Congress, the records of the legislatures of the States, the records of the courts of this country for the last twenty years, contain abundant evidence of the fact that the only way in which the Standard Oil Company acquired this control was by means of unjust railway discrimination.

The first bill upon the question of regulating interstate commerce that was offered in Congress, was presented at the instance of gentlemen representing the petroleum industry of this country. And now after these long years we have this condition of affairs that confronts us to-day; we have one large manufacturer refining eighty per cent. of the production who is trying to destroy another manufacturer who cannot refine much more than one-half of one per cent. of the amount of the annual oil product of the country. All the oil produced is not refined in the United States. There is some crude oil shipped to other countries, because the tendency of the legislation of some other nations is to favor the refining or manufacturing of the oil in their own countries.

The question now before the Commission is, practically, whether the public highways of this country shall be open to everybody at the same rates. Under the third section of the Interstate Commerce Act we shall claim that Mr. Rice is entitled to relief. But before entering into the discussion of the legal question let me call your Honors' attention to the real facts of this case, so far as the difference in rates is concerned. They have been analyzed for me—taken from the evidence and analyzed in this method; wherever the Standard Oil Company has had a fixed rate for a larger quantity, the larger quantity actually shipped has been taken as a factor, and the rate has been reduced to so many mills per actual gallon of oil shipped. In Mr. Rice's case, who has paid the freight on the weight of the barrel as well as the weight of oil, while the Standard Oil Company has not paid freight on the weight of the tank, the actual cost of transportation to Mr. Rice per gallon of oil shipped has been taken and the following is the result:—

On shipments via St. Louis, Iron Mountain and Southern Railway, from St. Louis, Mo., to Houston, Tex., the Standard Oil Company paid fifteen mills per gallon, while Mr.

Rice paid fifty-three and six-tenths mills per gallon, the discrimination being two hundred and fifty-seven per cent. in favor of the Standard Oil Company for the entire distance. From St. Louis to Galveston the Standard Oil Company paid fifteen mills per gallon, whilst Mr. Rice paid fifty-three and six-tenths mills, the discrimination being two hundred and fifty-seven per cent. From St. Louis to Little Rock the Standard Oil Company paid ten mills per gallon, whilst Mr. Rice had to pay eighteen and two-tenths mills, a discrimination of eighty-two per cent. The same discrimination exists between St. Louis and Newport, Arkansas.

On the Cincinnati, New Orleans and Texas Pacific Railroad line the discriminations are as follows:—

From Cincinnati to Lexington, Ky., four and nine-tenths mills are paid by the Standard Oil Company, while Mr. Rice pays eight mills, a discrimination of sixty-three per cent. From Cincinnati to Chattanooga the Standard Oil Company pays ten and one-tenth mills, and Mr. Rice twenty-six and four-tenths mills, a discrimination of one hundred and sixty-one per cent. From Cincinnati to Knoxville the Standard Oil Company pays nine and six-tenths mills per gallon, while Mr. Rice pays twenty-six and four-tenths mills per gallon, a discrimination of one hundred and seventy-five per cent.

Mr. Colston:—This simply means that is the difference in the rates between the two methods of shipment, I suppose, when you say the difference between the price paid by Mr. Rice and that paid by the Standard Oil Company. That is what you mean, I suppose?

Mr. Gowen:—Yes; between the two methods. Between the method of shipment by the Standard Oil Company and the only method of shipment Mr. Rice has. Between Cincinnati and Birmingham, Ala., the Standard Oil Company pays ten and seven-tenths mills, and Mr. Rice pays thirty-seven and six-tenths mills, a discrimination of two hundred and fifty-one per cent. From Cincinnati to Meridian, Miss., the Standard Oil Company pays twelve and one-tenth mills, against forty-four and eight-tenths mills, a discrimination of two hundred and sixty-seven per cent. From Cincinnati to Vicksburg the Standard Oil Company pays eleven and one-tenth mills, against thirty-one and two-tenths mills, a discrimination of one hundred and eighty-one per cent. From Cincinnati to Shreveport the Standard Oil Company pays seventeen and three-tenths mills, against fifty-three and six-tenths mills, which is an excess of two hundred and nine per cent. To New Orleans the Standard Oil Company pays eleven and eight-tenths mills, against thirty-one and two-tenths mills, which is a discrimination of one hundred and sixty-four per cent. From Cincinnati to Atlanta, Ga., the Standard Oil Company pays eleven and seven-tenths mills, against thirty-six and eight-tenths mills, a discrimination of two hundred and fourteen per cent. From Cincinnati to Macon, Ga., the Standard Oil Company pays twelve and one-tenth mills, while Mr. Rice pays thirty-six and eight-tenths mills, a discrimination of two hundred and four per cent.

On the Newport News and Mississippi Valley line, from Louisville, Ky., to Vicksburg, Miss., the Standard Oil Company pays ten and seven-tenths mills per gallon, against fifteen mills per gallon paid by Mr. Rice, a discrimination of only forty per cent., which ought to go to the credit of that company, the discrimination being so low.

MR. COLSTON :—I expect that is on account of water competition.

MR. GOWEN :—I am not advised as to that. But pray " assume a virtue if you have it not." On the same railroad from Louisville to New Orleans the Standard Oil Company pays nine and seven-tenths mills per gallon, and Mr. Rice pays fifteen mills, a discrimination of fifty-three per cent. From Louisville to Memphis the Standard Oil Company pays four and four-tenths mills per gallon, while Mr. Rice pays nine mills, a discrimination of one hundred per cent.

I next take the rates along the line of the Louisville and Nashville Railroad. From Louisville, Ky., to Nashville, Tenn., the Standard Oil Company paid seven mills against a charge of fifteen mills to Mr. Rice, a discrimination of one hundred and fourteen per cent. From Louisville to Chattanooga the Standard Oil Company pays nine and nine-tenths mills, against nineteen and five-tenths mills, a discrimination of eighty-seven per cent. To Memphis the Standard Oil Company pays five and seven-tenths mills, against twelve mills, a discrimination of one hundred and ten per cent.; to Atlanta the Standard Oil Company pays fifteen and eight-tenths mills, against thirty-six and eight-tenths mills, a discrimination of one hundred and thirty-two per cent. From Louisville to Selma the Standard Oil Company pays fifteen and one-tenth mills, against thirty-six and five-tenths mills, a discrimination of one hundred and forty-one per cent. From Louisville to Montgomery the Standard Oil Company is charged thirteen and six-tenths mills, against thirty-six and five-tenths mills paid by Mr. Rice, a discrimination of one hundred and sixty-eight per cent.; to Mobile the Standard Oil Company pays fourteen and four-tenths mills, against twenty-four mills, a discrimination of sixty-six and two-thirds per cent. From Louisville to Columbus, Ga., the Standard Oil Company pays seventeen and seven-tenths mills, against forty and nine-tenths mills, a discrimination of one hundred and thirty-one per cent.; to Augusta the Standard Oil Company pays sixteen and two-tenths mills, against thirty-five and one-tenth mills, a discrimination of one hundred and sixteen per cent.; to Pensacola the Standard Oil Company pays thirteen and six-tenths mills, against twenty-four mills, a discrimination of seventy-six per cent.; and from Cincinnati, O., to Birmingham, Ala., the Standard Oil Company pays ten and nine-tenths mills, against forty-seven and two-tenths mills paid by Mr. Rice, a discrimination of three hundred and thirty-three per cent., which I believe is the highest percentage of discrimination I have yet been able to find.

COMMISSIONER WALKER:—Have you made any statement showing any difference, leaving out of view this question of packages?

MR. GOWEN:—If Mr. Rice pays on four hundred pounds per barrel, that charge is distributed over the actual weight of the oil, which weighs, say, three hundred and twenty-five pounds, and then divided by the number of gallons contained in the barrel.

The Chairman:—Is your calculation based on that basis?

Mr. Gowen:—It is based on the actual charges shown in this testimony, and in each of these cases there is a reference to the page in the record. I propose to hand these papers to the Commission.

The Chairman:—Is that estimate based upon the rates as you understand them to be at this time, or at the time the petition was filed?

Mr. Gowen:—Based on the rates proved to be existing in this case; proved to exist since the Interstate Commerce Act went into effect.

The Chairman:—But not necessarily at the time the petition was filed.

Mr. Follett:—The rates were shown from April 5th right down to the time of the hearing of this case.

The Chairman:—It would be better if some one would make a calculation of the difference in the rates at the time the petitions were filed. As I understand you in this statement you have estimated the weight of the barrel package as included in the cost of carriage.

Mr. Gowen:—Yes, sir; because we are charged on the barrel.

The Chairman:—But the weight of the tank package is not included?

Mr. Gowen:—No, because it is not charged for. For instance, if a tank holds a hundred barrels of oil, and the charge is——

Commissioner Walker (interposing):—Come down to the question of barrel shipment. As I understood you in the opening, you took the rate per hundred pounds and found out how much that would be on the oil, excluding the barrel?

Mr. Gowen—Yes, sir; excluding the barrel.

Commissioner Walker:—If there is any statement made out in addition to this, let us have it made out just as the business was done, how much the rate was per hundred pounds without deducting the barrel.

Mr. Gowen:—You will discover as I go on with my argument the reason of this, for I will show hereafter that the railroad transports for nothing a tank, which is exactly the same weight as the barrels containing the same quantity as the tank.

COMMISSIONER WALKER:—The weight of the tank may be considered by them equivalent to the weight of the frame of the box car, or whatever is above the trucks. There was some testimony, I believe, to show that the weight was about the same.

MR. GOWEN:—I will come to that.

COMMISSIONER WALKER:—I am only asking that if a new statement be made out, that it may be made up without deducting the barrel.

MR. GOWEN:—It is quite easy to do that. Here we have deducted the weight of the barrel from the gross weight.

COMMISSIONER WALKER:—That would be seventy-five pounds out of four hundred?

MR. GOWEN:—Yes, sir; seventy-five out of four hundred.

MR. CUMMING:—That would be practically about twenty per cent.?

MR. GOWEN:—It is eighteen and three-fourths per cent.

MR. CUMMING:—Well, I said about twenty per cent.

MR. GOWEN:—So that my three hundred and thirty-three per cent. might come down to about three hundred per cent. or a little less. It makes little difference. The statement may as well stand as it is.

Now the first section of the Interstate Commerce Act prohibits unreasonable charges. The second section prohibits discrimination for like service. The third section forbids discrimination in favor of a particular traffic. Take them up in their order. The first prohibits an unreasonable charge. My learned friend Mr. Colston says that the presumption that a rate is reasonable remains until it is overturned.

MR. COLSTON:—No, I did not say that.

MR. GOWEN:—Well, I believe Mr. Baxter said that. At any rate, my friend Mr. Colston certainly said this morning that the rate established for Mr. Rice must be presumed to be reasonable, and, if that were so, *a fortiori* is the lower rate to the Standard Oil Company reasonable.

Mr. Colston:—I said that. I did not say the presumption was that; I said that the testimony showed it—that is, the barrel rate.

Mr. Gowen:—What does reasonableness consist of? Comparison with what other people pay—that is all. That is the whole matter. If they charge the Standard Oil Company one cent a ton per mile for transporting oil, and charge me five cents per ton per mile for the same service, there is no stronger argument under Heaven against the unreasonableness of the charge to me than the fact that they themselves make a lower charge for the same service to somebody else. Both charges cannot be reasonable. You cannot argue before a court that when I charge one man ten times as much as another that such charge is reasonable, and then, when I charge the other man one-tenth of what I charge the first man, that the smaller charge is reasonable also, because it is less than the other. Reasonableness under the statute means sufficient compensation, and it also means propriety, justice, equality—putting all people upon the same footing.

There is no greater evidence of the unreasonableness of a rate charged by a railroad company than the fact they charge other people a less sum. On page 528 of the record in this case, your Honors will find that after the passage of the interstate law, when these rates were being lined up, as the freight agent says, they made a rate on barrels to Mr. Rice of thirty-eight cents per hundred pounds for a hundred miles, which, on a short ton—twenty hundred weight—made a rate of seven dollars and sixty cents for hauling a ton one hundred miles, or seven and six-tenths cents per ton per mile on a low class of freight; and this rate was made to Mr. Rice by a railroad company whose average receipts from all kinds of freight probably do not exceed one cent and a quarter per ton per mile. Surely this is unreasonable. The average traffic returns of the largest eastern railways is about six and a half mills per ton per mile on all classes of freights. The rates of southern roads, according to Poor's Manual, is something over a cent a mile—taking the average of the highest and lowest classes of traffic combined—and yet, on this cheap, rough, common substance of oil, which is worth two or three dollars per barrel, they charge as much as seven and six-tenths cents a ton per mile.

Again, a reasonable charge is an amount that will pay a reasonable profit upon the capital of the railroad company; and when the average receipt is one cent and a quarter per ton per mile on all classes of freights combined, who will tell me that it is reasonable to charge seven and six-tenths cents per ton per mile for hauling oil? No freight rate upon a low-class product is reasonable if it produces seven times as much revenue to the railroad as the average receipts from low and high class freights together.

Mr. Baxter made yesterday what I conceived to be a wrong interpretation of the third section of this act. None of us disagree about the legal interpretation of the second section. But while there is no difficulty about the legal interpretation, there is a difficulty about the application, because our friends upon the other side say that oil in tanks is not the same particular kind of transportation as oil in barrels. We take issue with them upon the fact, but as to the legal construction of the second section there will be no difficulty.

But we take issue with them entirely about the construction of the third section, because, assuming for the sake of the argument that oil in tanks is a different traffic from oil in barrels, we say that even if it is a different kind of traffic, the discrimination in its favor as against our own traffic is prohibited by the third section. Wheat and rye may be different kinds of traffic. Could a railroad company carry wheat at half a cent a ton a mile and charge seven cents a ton a mile for carrying rye in the same quantities? Surely not. That would be an unjust discrimination against the rye traffic—an unjust discrimination, which is prohibited by the third section of the act.

I quite agree with what my friend Mr. Colston says, that you gentlemen sitting here are upon a much higher plane than if you were sitting in a court. You sit here to control the transportation of the United States. You sit here to guarantee to the people an equality of rates upon the public highways of the country; and the very fact that a railroad company should single out some particular kind of low-class traffic to make it pay ten times as much as the actual rates per ton per mile necessary to make a dividend for its stockholders, is one of the very evils which, under this third section, Congress intended to eliminate forever from among the complaints of the people of the United States; and therefore I say, with great confidence, that if my friends on the other side will carry the oil of the Standard Oil Company at a cent or a cent and a half per ton per mile, even admitting for the sake of argument that it is a different kind of traffic, that it is an unjust discrimination in favor of that kind of traffic as against our particular traffic carried in barrels, which, as your Honors see, has in one instance to pay as high as seven and six-tenths cents per ton per mile.

I come now to the principal issue in this case, and I propose to argue against the legality of the discrimination in favor of tanks as against barrels.

In the first place, if your Honors please, it is the same kind of merchandise, it has the same value, it is the same material. It costs no more to the person who buys it. When an accident occurs to the barrel, fifty gallons are lost; when an accident occurs to the tank, five thousand gallons are lost. Therefore, so far as the character and value of the merchandise, as entailing loss upon the company, due to injury or accident in transit, is concerned, the oil in the tank is infinitely more expensive for the railroad to move. That disposes of any difference in the material itself.

In the second place, it costs no more to handle the traffic. A great deal that we have heard from counsel, with reference to the danger incurred by the two methods of transportation, and a great deal that is in this record with reference to the risk upon the part of the railroad companies, is purely hypothetical, so far as it affects this case. What is this case? How do the railroad companies get this traffic? In both cases they get it in full carloads. Not from their own road, but from other roads. It comes to them in full carloads. The weight is practically the same. There are, say, ninety barrels in the car in barrels, and ninety barrels in the tank in bulk, weighing just the same. Both cars rest upon two trucks and eight wheels. It will cost just exactly the same amount per ton per mile to move each kind. An engineer, on a level road, with a fireman and two or three brakesmen, will take from fitfy to sixty tanks, or from fifty to sixty box or cattle cars or gondolas, loaded with the same material. It involves no greater expenditure of fuel. There are the same journals to lubricate, the same brakes to apply, and the number of men and the make-up of the train are exactly the same, and, so far as every one of these railway companies is concerned, each gets this material in full carloads at the extremity of its road, and each, at the same rates, will make just as much money out of a train of oil in barrels, as out of a train of oil in tanks. There is no difference whatever in the service that the company has to perform in order to move either a train of tank cars, or a train of box or stock cars, or a train of gondola cars, or a train composed of each of the three kinds of cars, over the same line for the same distance in the same direction. The cost of the service is, therefore, identically the same.

But our friends say there is back-loading for the tank cars. They have argued this case from the beginning as if there were back-loading only in respect to one peculiar kind of cars, the tank cars, and as if there was no back-loading in cattle, or box, or gondola cars.

Your Honors know that if there is a peculiarity with respect to any of these cars, the peculiarity is in the tank car. That *it* is the peculiar car, fit only for one or two or three kinds of business at the utmost, say petroleum, cotton-seed oil, and turpentine. The cattle car, the box car, the gondola car, are all fitted for various kinds of traffic. Therefore every argument advanced in favor of back-loading with tank cars, applies with equal or greater force to the case of other cars. They can and do also come back loaded.

Our friends say the difference in the volume of traffic south and north is marked. I have looked in Poor's Manual this morning, and the only one of these roads that reports the volume of traffic south as compared with the traffic over its line north is the Louisville and Nashville Railroad Company, and the Louisville and Nashville road is the line with reference to which most of this controversy is directed. I find from Poor's Manual for 1886 that the north-bound traffic of the Louisville and Nashville Main Stem was 72,019,252 tons carried one mile, while the south-bound traffic was only 61,743,402 tons carried one mile, and that the total north-bound traffic of the entire system was 337,353,670 tons carried one mile, as against 413,567,739 tons carried one mile south. Hence upon the Main Stem there is more north-bound than south-bound traffic, and Mr. Rice's oil may be considered back-loading as well as any other traffic, and both his oil and that of the Standard Oil Company are transported in the same direction.

But the legal point I make is this, that while the volume of traffic going in one direction or another is a justification for a difference in charges in the two different directions, it never can be a justification of discriminatiog in charges between two individual shippers in the same direction, because the railway company has no right to say that it will take the car of one shipper to load back, and will not take the car of the other. If there is three times as much traffic coming north as is going south, the rate going south, in what otherwise would be empty cars, may be lower than the rates coming north, but it affords no justification to favor one individual among others shipping in the same direction.

Again, our friends complain, with great emphasis, that there is an offensive taint left upon their cars by leakage from barrels, and this excuse is argued as if the transportation of bareled oil was a new business in the United States, and the railway companies were holding up their hands in holy horror, and closing their noses in pious fright, at the idea of soiling the immaculate purity of their rolling stock by the taint resulting from the transportation of petroleum.

Since oil was discovered, two regions in Pennsylvania alone have produced one hundred and sixty-two millions of barrels. Two-thirds of the oil produced is exported as refined oil; but a great many of the refineries in the past were scattered over the United States. Many of them are still located at Cleveland, some at Buffalo, many at Pittsburgh, and Mr. Rice has a little, modest one out in Marietta. So that out of the one hundred and sixty-two millions of barrels of petroleum produced from these two districts alone—the Bradford and Allegheny fields—it is quite safe to say that eighty million barrels of refined oil have been transported over the railroads of the United States in the last fifteen or twenty years.

Now, if the Commission please, the transportation of refined oil in tank cars is a thing of yesterday. The tank cars were constructed originally for the transportation of crude petroleum from the wells to the refineries, and it is only within the last two or three years—since the Standard Oil Company has constructed pipe lines from the oil region to the seaboard, and to the lakes—and there is no longer any use for tank cars to carry crude petroleum, that they have been used to transport refined oil.

If this is an offensive business, if this is a traffic which they do not like, why did the railroad companies of the United States never make any complaint about it before? The offensive smell in the car as a justification for high rates is something that is as imaginary as "the baseless fabric of a vision." Wine is carried in barrels, turpentine is carried in barrels, whisky is carried in barrels, beer is carried in barrels, other liquids are carried in barrels. Who ever heard of injury from the leakage of barrels, in a traffic that amounts to four millions of tons a year, being urged as a reason for imposing a high charge upon the traffic? The thing is preposterous.

Five years ago—or until these pipe lines were built to the seaboard—the traffic in refined petroleum was exclusively in barrels, and the railroads were delighted to get it, and it was carried in box cars, in gondola cars, and in cattle cars. There is no kind of a car made, except tank cars, that cannot carry it, and yet we are told that none except a tank car is suitable for this traffic. Whoever heard before that this great volume of transportation in the United States should be saddled with a high rate of freight on account of the offensiveness of the scent that it leaves behind it? But if there is a taint in this case, it does not come from barreled oil, and it stinks in the nostrils of every honest man, and leaves its unsavory perfume on every railway corporation in the United States that is guilty of carrying the same traffic for one man at less than for another, and this taint will never be removed except by the interposition of this Commission.

But my friends say there is the liability to accident by fire; that barreled oil is a dangerous thing. It is true that everything of this nature is dangerous. There is danger about all inflammable substances. Yet, so far as this record goes,—so far as the evidence in this case is concerned,—if your Honors will confine yourselves to the limits of a *nisi prius* court, the evidence is conclusive that the risk from fire attending oil shipped in tanks is four ten-thousandths of one per cent., and in barrels it is two and four-tenths ten-thousandths of one per cent., so that there is sixty-six and two-thirds per cent. greater risk,—sixty-six and two-thirds per cent. greater liability to accidents in shipments of oil by the tank method than by barrels.

But, if your Honors please, this is not a *nisi prius* court. You are here as Commissioners, and you will take judicial notice of the fact known to every railroad man in the United States, that the risk to fire in tanks is a hundred times greater than the risk in the case of barrels. Your Honors will remember that about four years ago there was a fire on the Pennsylvania Railroad caused by the burning of a train of tanks filled with oil that destroyed one property alone worth $270,000. There was a fire some where beyond Marietta, last year, when a train of seventeen tanks was burned up. Your Honors will remember the accident, in Canada some time last year, where a passenger train ran into the rear of a tank train, when the men, the material, the cars, the train—everything—was burned up. Nine men were burned and charred beyond recognition. There was a similar accident on the Lehigh Valley Railroad but a few years ago. The train took fire and caused a vast amount of damage. What is the result if an accident occurs to a train of tank cars? The oil in great volumes pours out on the ground, it takes fire, and you cannot put it out. If a collision occurs in a car filled with oil in barrels, some two or three may be broken, and the rest are rolled away; but you can do nothing with a tank full of oil when it ignites; the only thing you can do, in the event of a train of tanks filled with oil catching fire in an accident, if the locomotive is available, is to draw some of the cars away and leave the others that are on fire to burn up, together with everything else that comes in contact with the oil or with the flames.

But our friends say there is danger of leakage to oil in barrels; and on page 51 of the record, Mr. Page testifies that he estimates the amount of leakage at one gallon for every two hundred miles; and on page 415, Mr. Pierce, who is in the oil business, testifies that the leakage of a barrel going to Texas is five gallons to the barrel.

Now, if your Honors please, this petroleum industry in the United States has grown to great magnitude. It is not a new business. It has been known twenty-five years at least. Two-thirds of the petroleum refined in the United States goes to foreign countries. A large amount goes to India, to Ceylon, to China, and to Japan. The distance traveled in going to these countries is very great. In reaching them you must pass through the tropics. A portion of the route is in the Indian Ocean. If you go around the Horn, or around the Cape of Good Hope, you cross the equator twice. You encounter storms, the passage is rough, the vessel pitches and tosses, and tropical heat in the hold of a vessel is quite as great as the heat in a box car in the Mississippi Valley; and yet if our friends would have us believe their testimony that the leakage is a gallon to the barrel for every two hundred miles of transportation, it follows that if you send a cargo of barreled oil to China, every barrel will be empty long before the cargo reaches its destination. Nevertheless, this business has been going on for years, and the Chinese have been paying for barrels of oil just as if they reached them full, although, if the testimony is to be believed, there can be no oil in them at all. Surely our friends had better rely not so much upon their expert witnesses, as upon their own legal arguments, when they come before the Commission with a legend as startling as this.

Commissioner Morrison (interposing):—Maybe they do not shake it up so much in the water transportation?

Mr. Gowen:—I should be sorry to believe that our railways are as rough as I have seen the ocean.

Probably the future historian, in treating of the magnitude of this great American Oil Trust, will show the height to which the Standard Oil Company rose, by stating that, its commerce was at one time so great that the leakage alone of its immense cargoes of oil had calmed the waters of the great sea, and conferred upon it, for all future ages, the name of the Pacific Ocean.

But let us look at another discrimination. Out of every four hundred pounds weight of barreled oil, seventy pounds is the dead weight of the barrel, which they charge us for. They do not charge the Standard Oil Company for the weight of the tank at all. Ninety oil barrels when empty will weigh six thousand three hundred pounds. A tank containing ninety barrels when empty will weigh six thousand three hundred pounds. Therefore, the amount of dead weight which the railroad company has to move in either case is just the same; but they charge Mr. Rice for his dead weight, but do not charge the Standard Company for its own.

Let us look now at the cost of the car. They have made no complaint about that. We all know that a tank car will cost from $700 to $750, whereas the best box or cattle car can be built for from $450 to $500. Therefore, the money expended is greater in the case of the tank car than it is in the case of the ordinary railway car; and yet we, who use the cheaper car, are charged more than the Standard Oil Company, which uses the dearer.

Now I must confess, that in listening to all these ingenious arguments, and reading all this expert testimony, I was a little astonished to find that there was one element of the cost of transportation against us, which our friends did not prove in their testimony nor allude to in their arguments, and having had a great deal of railroad experience, I have no objection to giving them the benefit of it. There was one element of cost in barrels that does not exist to so great an extent in tanks, and that is the increased resistance of the wind due to the larger area of the end of our car. The end of a tank has a much less area than the end of a box car. Take a box car, say, eight by eight, which is sixty-four square feet of surface exposed to the wind, whereas a tank car at most is from five to six feet in diameter, and therefore the resistance to the wind is greater in the case of a box car than in the case of a tank car, and I am astonished that the railway experts did not allude to this in their testimony for it. Indeed it is about the only real, tangible fact or argument against our traffic and in favor of theirs, that I have been able to think of, and even it is entirely eliminated from the case whenever the wind changes, for I do not think there is anything in the testimony—marvelous as some of it may appear—that shows that the wind blows in both directions at the same time whenever the oils of the Standard Oil Company and those of Mr. Rice are in transit on the same train.

I now come to the second branch of this defense, and that is, that the Standard Oil Company furnishes the tank car, while Mr. Rice does not furnish any cars. But in reality the Standard Oil Company does not furnish the car, if the Commission please. The railroad company furnishes the car, because the railroad company pays for its use upon its line, and pays three-fourths of a cent a mile for each mile of distance the car is transported. There are two ways in which a railroad company furnishes cars to individual shippers. One way is to hire them from other people or other lines at three-fourths of a cent a mile, and the other way is to buy them themselves and put them upon the road.

So far as their duty as common carriers is concerned, and so far as their duty to the public is concerned, it makes no difference to the shipper by what method they elect to furnish the car. No car can come upon their road without their consent. And if the owner of the car receives full value for its service, just the same as if he was not a transporter, it can make no difference in railway charges, that the owner is occasionally a transporter himself, and sometimes loads his own car. The Standard Oil Company or the Green Line says to them, we will furnish a car if you pay for it at the rate of three-fourths of a cent a mile. It makes no difference to the Standard Oil Company whether they own one car or all the cars. Your Honors can see that while they practically have the control of all, they do not own all, and that their oil at reduced rates is carried sometimes in tank cars which they do not own. But what difference does it make to the shipper if the railway company elects one way or the other way of furnishing the car? I say that the payment of three-fourths of a cent a mile by the railway company for the use of a car costs the railway company more than if they had bought the car in the first place and put it upon the road.

We will suppose, for example, that a car only runs two hundred days out of the year, and will suppose that it only runs a hundred miles a day—and it will run more than that on these long hauls south—these two hundred trips of one hundred miles a day will produce a revenue, at three-fourths of a cent a mile, of $150 a year. Take a fair amount for depreciation, and you have an interest charge left for the money expended in the construction of the car, that yields a handsome revenue to the owner. If the railroad company should borrow at five per cent. the money to pay for the car in the first instance, it would not cost its treasury—leaving depreciation out—for interest account, nearly so much as it does when three-fourths of a cent a mile is paid for car service.

We all know that car trusts are extremely profitable. Companies owning and letting cars out to railroads at three-fourths of a cent per mile always make money if they can collect their revenues. A railroad company that cannot employ all of its cars on its own line makes money by letting them run on other lines at three-fourths of a cent a mile. The railroad companies in this case, therefore, furnish the tank cars, but in a roundabout way. If they are willing to pay John Smith three-quarters of a cent a mile for the use of a car, and give that car to the Standard Oil Company, they must also pay somebody else for a car either by hiring or purchasing, and also give a car to George Rice. It makes no difference, with reference to their duty to the public, how or in what manner they furnish the car to the shipper, and it makes no difference in law that the Standard Oil Company in some instances, but not in all, happens as well to be the owner of the car as the owner of the material that is carried in the car.

But the Interstate Commerce Law requires that all be treated alike. If I invent a car that is a valuable one for passenger travel, and I hire that passenger car to the railway at five cents a mile, when I become a passenger can I claim that they must carry me for nothing because I own the car? It is their car, so far as their duty to the public is concerned, for when they pay me for the use of the car a very full value for the services it renders to them, it is to all intents and purposes their own car when they come to deal with me as a passenger.

But Mr. Baxter said yesterday, let George Rice furnish the tank cars. If the Commission please, he is not obliged to furnish them. What would happen if he did furnish them? Let us look at this as business men, and not as lawyers, and let us look over the heads of railroad counsel, who are always right and always honorable, and let us deal with the railroad freight agents; with Mr. Culp, for instance, who my friend thinks is a very worthy man, and what will be the result? Your Honors must take judicial knowledge of the iniquity of the human race. You cannot deal with such a subject without knowing from your experience of human depravity just exactly what will be done in a given case. Where do we want to ship oil to? To the south and to the west. To places where, as I say, in consequence of railroad discrimination, and in consequence of that only, the traffic that comes back in these tank cars is also controlled by the Standard Oil Company. George Rice, let us suppose, purchases twenty tank cars; he sends them down south just as the Standard Oil Company does; but George Rice owns no cotton-seed oil and can get none to send back. Why? Because there is a trust that controls it. There is a cotton-seed oil trust, and it is held in the same interest as the Standard Oil Company; and I assert, without fear of contradiction, that the unjust discrimination in rates in favor of the Cotton-seed Oil Trust prevents any one except the Cotton-seed Oil Trust from getting back-loads—and, therefore, Mr.

Rice will be told that while he can get the same rates as the Standard Oil Company if he can furnish back-loading of cotton-seed oil, he must pay double if he furnishes no back-loading.

MR. BAXTER :—Is there any proof in this record of that?

MR. GOWEN :—There is proof to this extent, that Mr. Flagler, a relative of the other Mr. Flagler who is engaged in business with the Standard Oil Company, is the president of one of the branches of this cotton-seed oil trust. True it is but an entering wedge of proof, but it is hard to get even that, but that will open the question if you press it home. Your Honors cannot narrow yourselves down to the limits of a *nisi prius* court. Your Honors cannot deal with these great questions that at last are to open the highways of a great nation, without at least taking some cognizance of those facts with which every business man who has had to deal with railroad affairs in this country is as familiar with, as the student should be with his Blackstone when he applies for admission to the bar.

But my friend Mr. Baxter made a very humorous allusion to Mr. Rice yesterday with respect to his ability to furnish tank cars, and his authority for his statement was a newspaper publication called the *Oil City Derrick*. Now, newspapers are not always the best evidence, and the particular newspaper, I suppose, is not in the record of this case at all. As I permitted my friend to use it, I hope he will permit me to read a letter that is also not in this case, but it is a letter that contains the evidence of a fact that is just as pertinent to this issue, and without the knowledge of which your Honors cannot decide such cases properly any more than you can by ignoring anything that is in the record.

Mr. Rice went to a carbuilder to order tank cars. He wanted to get them as other people do who wish to buy cars, by paying a certain sum down and having the deferred payments put into the form of a car trust. He did not have enough money to pay for the cars at once. Now so powerful has this Standard Oil Company become in the United States, so unrelenting has it become in its opposition to all who dare oppose it, and so powerful is the grasp that it holds upon the railroads of the country, that he received this letter from the Milton Car Works:—

"MILTON, PA., December 6th, 1887.

" *George Rice, Esq.,*

"MY DEAR SIR:—We have just wired you as follows:—'Our financial friends decline to advance the money. We cannot build them, except for cash,' which we confirm. Our Mr. Dickerman returned this morning, and after using every exertion, failed to negotiate the deferred payments on your cars. Our financial friends state that they have declined to do this mainly on account of some supposed controversy which they claim you have had with the Standard Oil Company, and various railroads in the West. They feared you could not use these cars to advantage if the railroads should be hostile to your interests. We regret this very much, as we have been to considerable trouble and expense in making arrangements to build the cars, and are now seriously disappointed at the refusal of the parties to take the deferred payments, as they had partially promised to do. We should be very much pleased to build these cars for you, if you can negotiate the notes with your friends, and pay us the cash."

Such was the answer. Let me see anybody in these United States, who, before your Honors have made a proper decision upon this subject, can even buy one of these tank cars unless he pays the cash for it, and let me see anybody that can, after he pays for it, put a tank car on the railroads in fair and open competition with the Standard Oil Company. The thing is an impossibility.

Mr. Baxter said yesterday, as a legal proposition, that if there is a certain kind of coal, and the charge for transportation is, say, two cents per ton per mile for it in stock cars and three cents in box cars and five cents in gondola cars, the man who ships in the gondola cars and pays his freight cannot afterwards come into court and call the railway company to account; that he cannot go before the Interstate Commerce Commission and get any indemnity for the past or security for the future. That depends! as the French say—and depends upon whether the man who had to pay the five cents in the gondola car had at the same time the equal right to get the cattle car for two cents; but if a railway company maintains these three different rates, and only gives the low-priced car and rate to one favored shipper, and other shippers, because they cannot do anything else, have to take and pay the high-priced car and rate, they have a right to complain in every tribunal in the country having jurisdiction, and the right to complain throughout the whole land of the iniquity that opens a public highway to one citizen and closes it against another.

Will it be pretended that I cannot have the benefit of the lowest of two rates on the same article, when both are given to another; and that one party can be furnished with a cheap car and low rate, while the other must pay the higher price. Surely such a course is an unjust discrimination against one and in favor of another.

Mr. Baxter said yesterday that if a railway company had a Pullman palace car and charged passengers in it four cents a mile, and an ordinary car and charged the passenger three cents a mile, and an emigrant car and charged the passenger two cents a mile, that the man who uses the emigrant or low-priced car, in which two cents a mile is charged, cannot claim for the same low rate to use the Pullman palace car, for the use of which another passenger is charged four cents a mile. Why, most assuredly not. But let us reverse the case. Do not let us take a supposititious case, but rather one exactly like the one that is now under consideration—and that would be where the company charges for the use of the Pullman palace car two cents a mile, and for the use of the ordinary car three cents a mile, and for passage in the emigrant car four cents a mile, and compels all but one passenger to ride in the emigrant car at the rate of four cents a mile. Surely the other passengers can claim upon payment of two cents per mile the same right as the favored passenger of traveling in the Pullman palace car.

At this point (one o'clock P. M.) the Commission took a recess until two o'clock P. M. At the expiration of the recess the Commission resumed its session, and Mr. Gowen resumed his argument as follows:—

Mr. Gowen:—I desire to correct what I suppose may be a mistake made in my argument of this morning. In speaking of the leakage of oil, I referred to the fact of refined oil being shipped through the tropics to China in barrels. I am told it now goes in tin packages. I am, however, under the impression that originally all the oil that was exported out of the country was shipped in barrels. I know that you see the blue oil barrels almost all over Europe. I prefer, however, to make the correction not only for the sake of accuracy, but to avoid setting up any windmills for my friends who follow me to attack.

I endeavored to show this morning, and I want to repeat the illustration now, that so far as the equality of the shipper before the law is concerned, when Mr. Rice tendered a full car belonging to another company, to the Louisville and Nashville Railroad Company, for which that company pays three-fourths of a cent a mile for car service, and when that car is filled with the same material, and weighs practically the same amount, he is, so far as the Louisville and Nashville Railroad Company is concerned, identically on a par with the Standard Oil Company, which furnishes a car of different shape but of the same weight, loaded with the same material, and costing no more to haul, and for which the Louisville and Nashville Company pays for car service also three-quarters of a cent per mile. And that the question of furnishing or not furnishing cars by the shipper does not apply to cases where, like the present, in both cases the Louisville and Nashville gets the loaded cars at the end of its line from another railway, and pays for each the same mileage charge for car service.

If this were not the case, we would all be in a very sad state of existence to-day, especially those of us who depend for our fortunes and our living upon the right to be on equal terms as shippers on the public highways of the country.

My friend said this morning, and he gave his personal assurance as counsel, which always carries great weight with the court, that if Mr. Rice furnishes tank cars, he shall, in all respects, be placed on the same footing as the Standard Oil Company.

May it please your Honors, with all due respect to our learned friends on the other side, we prefer to have such promise made to us by this tribunal in the form of an order. Until we get it, depend upon it, we cannot rely upon the promises of counsel, because when we go to ask that those promises be fulfilled we will be turned over to the tender mercies of the freight agents, and we all know that in this country the majority of freight agents desire to have the business of the Standard Oil Company in preference to the business of any other shipper.

The railroad companies speak in two methods, one by the freight agent dealing for traffic, the other by counsel appealing to the court. Your Honors have heard of that celebrated prelate who was addicted to profanity, and when upbraided for the vice said, that he always swore as John the man, and never as John the archbishop ; but his censor exclaimed, " Ah ! when John is damned for his sins, what will become of the archbishop." Our friends tell us that Mr. Rice shall be put upon the same footing as all other shippers ; they tell us this not as freight agents, but as lawyers, and when we go to them in their capacity as freight agents they will tell us that they spoke only as lawyers. We, who are business men, cannot close our eyes to the fact that this iniquity will never be stricken down unless your Honors furnish us the weapon in the form of the decree of your tribunal.

Another legal argument I have to make in this case is that where a state of things exists, no matter how brought about, by which only one person can get the benefit of a certain rate of transportation, that rate of transportation is *ipso facto* an unjust discrimination. Nobody can get tank cars, except the Standard Oil Company and their affiliated interests. The railroads make a special rate, applicable to everybody of the class that ships in tank cars. But no one can join that class, except the Standard Oil Company.

Thirteen or fourteen years ago, in the State of Pennsylvania, I took part as a member of a Constitutional Convention, the one great object of which was to do away with the evil of special legislation. We declared that all legislation should be general; that there should be no special legislation whatever. And the people adopted our Constitution by a large majority, and are now thankfully living under as much of it as the legislature and the courts and the corporations will permit to become operative. The legislature that succeeded the sitting of the Constitutional Convention showed how easily the versatile genius of the American mind can overcome the trammels of constitutional prohibition. It was necessary for some purpose or other that there should be special legislation for the city of Philadelphia, and the legislature therefore enacted a general law, not a special law remember, to the effect that all cities in the Commonwealth having more than five hundred thousand inhabitants should be classed as cities of the first class. And from that time forth we have had nothing but general legislation, which applies to every city of the first class alike, although the fact is well known that the only city of the first class in the State is the city of Philadelphia.

MR. COLSTON:—They must have got that idea from Ohio.

MR. GOWEN:—I do not know where they got it from; but it is quite probable, as I believe the Standard Oil Company originated in Ohio. So the railroads following the Ohio or Pennsylvania idea, have divided their shippers into first and second classes, the first class being those who ship by the tank, and the second class are those who do not; but the Standard Oil Company is the only shipper of the first class. And this fact is conclusive evidence that the first class rates are an unjust discrimination.

May it please your Honors, could our friends upon the other side say, that as oil is an inflammable substance, a substance which evaporates quickly under the heat of the sun and that as a white car would not attract the heat of the sun to as great degree as a car of another color, that all oil should be shipped in white cars, when none but the Standard Oil Company could supply white cars?

Suppose they said, that as the cost of transportation is in proportion to the rapidity with which cars are drawn over the road, we will carry all the oil at a fixed rate that is moved at a speed of twenty miles an hour, but we will carry at half that rate all moved at a speed of ten miles an hour, could they then put the Standard Oil Company's traffic into the ten mile train, say the train was full, and make all other oil go and pay at the twenty mile rate?

Suppose they should say, we will carry all the oil for anybody who furnishes the locomotive to pull the train, at a certain rate, and pay him full price for the use of the locomotive—and charge a treble rate for him who does not furnish the locomotive? If it were known that only one shipper could get locomotives, would they be allowed to make a discrimination as unjust as that?

Let me go further. Suppose there was a patent car that was undoubtedly and admittedly better fitted for railroad transportation than any other car? And I may say here, there is a patented tubular iron car now being constructed, that will carry more cargo, in proportion to the dead weight of the car, than any heretofore known. Now every railroad company knowing that they could carry twenty or thirty or forty per cent. more cargo for the dead weight of the car than with any other kind, would know they could make more money carrying freight in such a car than in those of any other description.

Suppose one large grain shipper bought the exclusive right and controlled the patent for making and using such cars. Suppose during the existence of the patent no other shipper could get any of the cars. Suppose such a thing existed in the United States. Would this Commission justify a special charge for grain that could only be taken advantage of by the owner of the patent? Surely not. The very fact that such a thing exists—the very fact that these circumstances are existing—makes the special rate an unlawful discrimination; because nobody but one person can take advantage of it, and, if it were not declared unlawful, the whole grain traffic of the United States could be monopolized by one shipper.

But if the argument of our friends on the other side is right,—if these tank cars are the best for the business; if these tank cars, differing from what our previous experience on this subject has led us to believe, are the ones that get ninety per cent. of back-loading; if this be true,—then it is the duty of the railroad company to furnish such cars to all their shippers. If all the arguments and illustrations with respect to these tank cars are correct, it is surely the duty of the railroad companies to furnish them. I do not say it is the duty of a railroad company to furnish a particular or special car suitable only for a particular class of traffic that is of uncertain or irregular volume; but when you come to deal with an article like petroleum—a traffic amounting to four millions of tons a year—and compare it with the other great products of the country, how can anybody say that that is something so peculiar, fitful, or irregular that railroad companies are not obliged to furnish the best kind of cars for the purpose of transporting it? The entire wheat crop of the country is not more than thirteen million tons, and probably not more than one-third of it is carried over the railroads; the output of iron ore last year was eleven million tons; the production of pig iron was six million three hundred thousand tons; the weight of steel rails manufactured in the country was two million two hundred and ninety-five thousand tons; the cotton crop weighed one million four hundred thousand tons. Could any railroad company justify itself in declining to furnish cars for any of the classes of traffic that I have named? Surely not. They are the great products of the country. They might just as well refuse to furnish cars for the transportation of passengers. These great products, that amount to millions of tons a year, enter into the general business of the country, and contribute to our prosperity as a nation. The railway companies furnish cars for live stock, they furnish refrigerator cars for perishable goods, and passenger cars for passengers. Can they refuse to furnish cars for the oil trade? No. But even if they could refuse to furnish by purchasing cars for the oil trade, certainly they cannot furnish by hiring at the same price two kinds of cars for that trade, and charging different rates of transportation for each, without admitting all shippers to the benefits of both kinds. So long as they do not furnish both kinds to all shippers, they are guilty of unjust discrimination in furnishing the low rate of transportation to one shipper and declining to furnish it to another. If for their tanks they get back-loading, it is their duty to furnish tanks to all, and if they do not furnish tanks to all they can make no difference in their charges, due to the character of car used, the service being practically the same.

So far I have discussed this case upon the supposition that all these arguments and illustrations have been advanced by our friends on the other side for the purpose of really and truly proving and showing that there was a reason why the Standard Oil Company, by shipping in tank cars, should have this great advantage they are shown to possess; but I say that the evidence in this case, outside of those particular subjects which up to this time I have devoted my attention to, makes it conclusive to my mind that the object of all this testimony was to perpetuate an unjust distrimination for the benefit of the Standard Oil Company and not for the benefit of the railroad companies.

Now, if that is the real object; if there is no real foundation for the discrimination, and there is a determination to benefit the Standard Oil Company at the expense of other shippers, what becomes of all this structure of testimony and argument? But is not this the real object? I show it by the fact that for years several of these railway companies have maintained a fixed rate—a rate which has never been changed—with respect to the Standard Oil Company. I show it by the fact that they have had, in innumerable cases, a rate amounting to a certain sum per car, irrespective entirely of the quantity that car contained, and that that sum is arrived at by an assumed rate per hundred pounds, and we can see at once that that rate is only one-half of what it should be, when the tank contains double the quantity of oil on which the rate is based.

I can show it by the fact that our rates have been increased, double and treble, from time to time, and from day to day. I show it by this voluminous correspondence of Mr. Rice with the railway companies, showing that life must have been almost a burden to him in his attempt to transact his business in competition with the Standard Oil Company. I have here, handed me the other day, a great volume of fifteen, twenty, or thirty telegrams, that passed between him and the railroad freight agent upon the subject of whether he should be permitted to have one car of oil sent over the line at the very rate which that particular freight agent testified before this tribunal was the proper rate upon his oil. Who could live under such a condition of affairs? The Standard Oil Company has everything they want, even without asking, and Mr. Rice has a constant struggle and fight to secure the right of shipping at double or treble the rates paid by his favored rival. I do not always blame the railroad companies. And, for the relief of the railroad companies themselves, the Commission should take some step to stop this iniquity. The Standard Oil Company controls nearly all the oil traffic of the country. There are hardly any points in the south and west that cannot be reached by more than one railroad. The Standard Oil Company goes to a railway freight agent and says, if you will make a rate for us at so much, and for other people at so much more, we will give you a half million dollars' worth of business; if you don't, we will either lay a pipe line or give our business to a rival line. The railroads want the money and ought to have it, but the Standard Oil Company presents such an alternative that the railroad company can only secure the traffic by inflicting discrimination and injustice upon other railroads and other shippers.

Whenever it is known, by the decree of this tribunal, that everybody shall be treated alike upon all railroads, then all the railroads will be entitled to their proper share of the traffic, at equal rates to all shippers, and this tyrrany of the Standard Oil Company will be ended.

Take the case which Judge Baxter decided lately. The case of Handy *et al. vs.* The Cleveland and Marietta Railroad Company, 31 Federal Reporter, 689, where the receiver of a railroad company was removed because he had made this unjust discrimination. In that case your Honors will see that the Standard Oil Company went to the receiver and said to him, if you do not do what we want you to do, we will construct a pipe line and take the oil off your railroad; but, if you give us a rate of ten cents a barrel, and charge George Rice thirty-five cents a barrel, and out of that thirty-five cents pay to us twenty-five cents in cash for every barrel George Rice ships, we will give you our business; but, if you do not, we will lay the pipe line. Such was the contract they made. What would have been the result if Mr. George Rice had shipped over that railroad as much oil as the Standard Oil Company? Why, the Standard Oil Company would have received for every barrel they shipped, fifteen cents in money more than they paid for the shipment. That is, they would have been refunded the ten cents and been given fifteen cents as a bonus besides.

I remember well, in those halcyon days when Fiske and Gould controlled the Erie Railway and managed the Atlantic and Great Western Railroad, that an oil association made a contract with the railroad company which gave them a rate on oil, based upon the price at tide water, with a guarantee that a fixed rate per barrel profit should be made in handling it. The first year's business over the Atlantic and Western Railroad developed the fact, that the hundreds of thousands of barrels transported under this contract brought not one cent into the treasury of the railroad for transportation, and that the railroad company had to pay, at the end of the year, twenty-five cents upon every barrel for the privilege of transporting it, in order to make up the guarantee of a fixed profit to the dealer.

This has been the story for twenty years, and now for the first time, a man who has the courage to fight for his rights, and to claim that the Declaration of Independence is not yet a failure, and that all men are still created equal, has at last the privilege of applying for redress, to a tribunal created for the very purpose of righting such monstrous wrongs as these.

Again, the next point I have to make is that the very classification for which we are contending, namely, the same for barrels as for tanks, is in use upon the other railroads of the country. That is to say, that other railroad companies admit the right of the shippers to have both classes of oil carried under the same classification, and at the same rate. Such is the practice of other railroad companies. How then can it injure our friends on the other side? The eastern railroad companies do it, the railway companies of the northwest do it, and I may say that in the majority of cases it is a customary thing for oil in barrels and oil in tanks to come under the same classification. Why should not our friends treat both alike?

I desire to act with perfect fidelity to the court. I do not want to make an argument that is not absolutely just and fair, and when I cite the example of other lines I do not mean to say that their reason for their action is always a commendable one. I must admit this, that in many cases in the east and north there is practically but one shipper, the Standard Oil Company, and therefore the railroad companies have agreed to the same rates for barrels as for tanks, because there is but one shipper to take advantage of the rate, and the Standard Oil Company is not injured by the uniformity.

Mr. Colston:—No competition, and that is to account for it.

Mr. Gowen:—I mean that I fear, that that natural depravity to which I have alluded, would not allow them to be so good as they are if any temptation was presented by the Standard Oil Company. There was once an old Justice of the Peace whose mind was always perplexed and disturbed when he had to deal with the two conflicting sides of a case, and he found it easier to decide when he heard but one side. So, when some of our eastern and northern railroad companies want to be relieved from the necessity of making a discrimination between shippers, they conduct their business so as to kill off all but one shipper, and, when they have thus relieved their minds from the conflicting claims of rival shippers, they "purge themselves and live cleanly," become virtuous, and make the rates the same to all. But if they can carry at a profit oil in barrels and oil in tanks at the same rate, without dread o fire or fear of smell, when the Standard Oil Company is the only shipper by both methods, why cannot these defendant railroad companies do the same when the Standard Oil Company ships in tanks in competition with George Rice who ships in barrels?

Again, this does not involve any question of loss to our friends on the other side. We do not ask to disturb their revenues. We are quite as willing that they should make as much or even more money than they now do. We do not care how they equalize rates, whether by putting down ours, or putting up those of the Standard Oil Company, or adding the two together and dividing by two to find a medium rate.

Mr. Colston says this Commission cannot force the railroad company to put up its rates. We do not ask that, and are quite willing that our rates shall be put down, but we say that they shall carry for both parties at the same rate, and in so doing that they may advance the rates they now give to the Standard Oil Company, and place ours at the same point. If my friend Mr. Baxter wants revenue for his corporation, let him charge the Standard Oil Company the same as he charges us. We do not care how this matter is equalized, so that the rate is reasonable. We want to do business. We want equality. We are entitled to it. Here, then, you have a case in which the decision in our favor places the railroad companies in the same category as other railroad companies in this country, and by which our adversaries may really add to their receipts and increase their profits. Why should they complain? Is it not right that it should be so? Upon what principle can they justify a discrimination which rules us out of business, and actually decreases their revenues?

But, if your Honors please, I now come to a branch of this case which I think is the most peculiar that I have ever observed. It shows an absolute want of appreciation on the part of one of these railroad companies as to what their duties to the public are, and as to the basis upon which rates of transportation are to be made. If you will look on page 19 of this record, sections four and six of the answer of the Louisville and Nashville Railroad Company, you will see that they admit that whenever there is outside competition—that is, competition beyond their own line, on a river, for instance—they carry oil in barrels at the same rate that they carry oil in tanks. Now let us examine this. George Rice, we will say, is enabled by water to send his oil in barrels to a certain point upon the seaboard, or to a certain point upon one of the rivers, which can also be reached by the Louisville and Nashville Railroad. The moment that fact is established, the Louisville and Nashville Railway Company makes its rate on barrels to that point the same as on tanks, and both low enough to enable the Standard Oil Company to compete in barrel shipments with George Rice. Why? Because if they do not do it, the Standard Oil Company could not compete over the Louisville and Nashville Railroad on equal terms with George Rice, who has another avenue of transportation open to his traffic.

Now leave the seaboard or river side, and come to an inland point to which the Louisville and Nashville Railway Company, and that line only, takes the oil of the Standard Oil Company at, say, fifty cents a barrel in tanks. Why has not Mr. Rice the right to meet that competition in barrels as well as the Standard Oil Company, by the aid of the Louisville and Nashville Railroad Company, has the right to meet the competition of the river line. Far more so, so far as the Louisville and Nashville Railroad is concerned, because the railroad company themselves are the cause of the low competitive rate. But, say this railroad company, we will always enable one of our shippers to meet an outside competition, but when the competition is made by our own discrimination in rates we refuse to give another shipper any opportunity of meeting it.

What is a railway? A public highway—nothing else. Just like the rivers. The rivers are public highways. Nobody in this country, Standard Oil Trust or other inferior character, attempts to put a tourniquet upon them. When the first public roads were made in this country they were turnpike or wagon roads; but they were public highways. No company attempted to make a different charge for toll to one man as against another for the like vehicle. When the railroad companies were organized they took the private property of the citizen, under the right of eminent domain, because the property was taken for a public highway in trust for the uses of the public; and the first railway companies in this country were organized simply with the right to maintain a public highway and to charge a toll for its use. It was expected that the transporters should furnish their own cars and their own locomotives or horses, because originally the service on railways was done by horses. Railroads are simply advanced and improved avenues of transportation; but, with reference to the rights of the community to equality of rates, they preserve throughout the same features as the rivers and turnpikes. Now why should there be any difference now existing? God made the rivers, and man laid the rails, I suppose our friends will say, and hence the Standard Oil Company deserves to have the monopoly of low rates.

Why, if the Commission please, look at the development and prosperity of this country wherever the public highways are natural highways and open at the same rates to all. Look at the lake cities. Where will you find, except as to one or two places on the seaboard, such industry and prosperity as that which clusters around the shores of our great lakes Why is this? Because every man has a free right to transport over the natural highway on terms of perfect equality; because no one great monopoly, with its power over a weak freight agent, can trample upon the rights of other men in the use of those highways which the Almighty created without the intervention of man. You see prosperity wherever there is equality and freedom. Where upon the railroads in this country does such freedom and equality exist? Yet they are public highways, just like the river and the turnpike. Every man is entitled to the same rate; every man should be entitled to the same service by paying the same rate.

What is the admitted great evil in this country. Any student of social and political science will say that the one great evil in the United States is the unjust accumulation of wealth by means of railway discrimination. The President of the United States, in his recent message, referred to the growth of syndicates and trusts monopolizing the business of the country. Now the point I should like to impress upon your Honors is this, that in a manufactured article not protected by patent right, and the basis of which is one of the great natural products of the country, there can be no successful syndicate, there can be no successful trust or monopoly, *without the* *protection of unjust discrimination by railways.*. You have such a syndicate or trust in the Standard Oil Company. It was built up by unjust discrimination; without it, it could never have reached its present dimensions, and it is endeavoring to protract its existence to-day by unjust discrimination. You have also a cotton-seed oil trust. Why should there be a monopoly or trust in cotton-seed oil! Why should one person have a right to monopolize this industry? You have a sugar trust to-day being organized all over the country, representing seventy millions of dollars, I believe. That sugar trust cannot be formidable unless the railroad companies give it a preferential rate over individual refiners. Why? Because the moment it advances the price of sugar; that moment, in every city, new sugar refineries will spring into existence, and the independent manufacturer will then be able to compete with the trust and competition will keep prices within limit. But if the trust has an advantage in transportation rates, where will the independent refiner be? He can do nothing to compete successfully for the market, and will be crushed out of existence.

About eight or ten years ago there was a combination of wrought-iron pipe manufacturers in this country. The moment they restricted production, so as to put up the price, new pipe mills were erected by outside manufacturers. But if the railway companies would say to the trust for refined petrotroleum, to the trust of refineries of sugar, or to any other such combination, that they can have an advantage in rates over all individual competitors, nobody can ever break the monopolies, or successfully compete with them for business.

Suppose there was a monopoly of wheat, and a monopoly of iron—and how easily each could be made if some great shipper of wheat or of iron should go to the railway companies and say, I will give you so many millions of bushels of wheat or tons of iron if you carry the same for me at a rate lower than for others, and thus secure such lower rates. The very fact that he had the assurance of getting a rate lower than that given others, would enable him to collect together the amount of business necessary to secure the lower rate, for he could give the producers a portion of this rebate, and thus secure the entire business. And while the railway companies would attempt to justify the discrimination, upon the hypothesis that they were dealing with a wholesale man, it is simply the unjust rate that enables a mere middleman to become a wholesale man and monopolize the traffic. The fact of the Standard Oil Company saving fifty cents a barrel in the transportation of oil over all competitors, enabled that company to secure almost the entire product of oil, and make themselves rich at the expense not only of the railroad company but of the honest refiner who pays full rates for transportation.

Let us suppose that in France but one corporation handled eighty per cent. of the wine grown in the country. The grape grows all over the country. You see train-loads of wine in France as frequently as you see train-loads of oil in America. The price of wine enters largely into and affects the social and financial condition of the French people, just as the price of oil affects the interests of the people of this country who produce it. I venture to say that if any such thing existed in France, as one corporation controlling eighty per cent. of the wine manufacture and traffic of the country, there would be a French revolution within twenty-four hours of the discovery of the existence of such a monopoly.

Mr. Colston :—They can get up a revolution in France upon a very small pretext.

Mr. Gowen :—They would have a very good pretext in such a case. Suppose that in Italy one company controlled eighty per cent. of the olive oil, or eighty per cent. of the silk industry of the country ; or suppose one man could control the monopoly and make the price of the bread that is placed on the table of the poor man in Europe, how long would any dynasty exist that permitted such a monopoly ? But here we say nothing. Why ? Because the country is so rich we can afford it, and, *for the present at least*, it is easier and cheaper for the injured person to turn to some other trade or occupation, than to waste his time in fighting monopolies. This is an exceptional country, and we are rich enough to stand the accumulation of a very large surplus collected in the pockets of our privileged classes by railway discrimination. The gross receipts of the railroads of this country, in round numbers, are eight hundred millions of dollars per annum, and I verily and honestly believe that one hundred millions of dollars annually are taken out of the pockets of the people of this country by unjust railway discrimination, and turned over to this privileged class—and this is equal to a tax of two dollars per head paid by the people for the sake of building up the new aristocracy of wealth that in this free country arrogate to themselves the position of the nobility of the older countries. And who compose this privileged class and constitute this new order of nobility? Not men of intellect, or genius, or learning, or even of honest thrift, or patient industry? By no means! Cold, calculating men, who, by open bribery and naked rascality, secure the favor of railroad officials, until they wring one hundred millions of dollars annually from the mass of the people and the overburdened industry of the country. These are our privileged classes, these are the men whose patents of nobility are inscribed upon the records of a railway company—attested by the broad seal of the corporation, and countersigned by a general freight agent—and when people from other lands visit this country and ask to see our great men, we do not say, This is a man of great intellect and genius and learning, or of long descent, of kindly character, and great charity; but we say, Behold the new gods, whom we now worship! Behold him whom the railroads delight to honor, and the limits of whose wealth we are only permitted to conjecture!

Nobody can deny the truth of what I have said. We cannot close our eyes to the fact. It is almost axiomatic, that it is impossible in a country like this,—where the people are so adventurous, where everybody likes to hit the man uppermost, and enter into competition with the greatest, no matter how extensive his business may be,—*it is utterly impossible that there can be any success attending a monopoly of natural products without the aid of the unjust discrimination of railroad companies*. And only when such unjust discrimination ceases will all people be placed on terms of equality.

Now, how has this discrimination generally been exercised? In many ways, among others, as is shown in this case, by special rates and reduced weights. In other cases, as in this, by a peculiar system of charges that gives to one man the right to send over a railway much more than he pays for. It has often been exercised by giving rebates and drawbacks, and in some cases, I fear, it has been exercised by means of what a gentleman in England has called ghost trains.

Mr. Colston:—What kind of a train is that?

Mr. Gowen:—It is a long train of loaded cars, which, though visible to the sight and susceptible of identification by all the other senses, makes no impression upon the manifests of the corporation, and leaves no trace upon the treasury of the company. This gentleman to whom I allude, in search of statistics, was struck with the fact that in one certain year the amount of grain which left Boston, New York, Philadelphia, Baltimore, and Portland in vessels for Europe was much greater than the aggregate amount transported over the railways from the west to those ports in the same period, and yet he knew that a large amount of grain transported from the west to the east is used for home consumption, and does not enter into foreign commerce at all; and the only reason that he could give for this anomaly in statistical information was supplied by the report of ghost trains as a favored method of transportation by some celebrated shippers who were then supplying the European demand for our cereals.

I fear that such things are done. Your Honors may sit here as judges looking only into the narrow limits of the records of the case before you, but you cannot cure this evil until you take some judicial cognizance of what is always so difficult to get upon a record.

Now, what injury will result to anybody by stating that all shall have equal rights? We have asked nothing that we ought not to have. I am free to confess that when this Interstate Commerce Bill was first talked of, I thought it referred to a subject that the States themselves should deal with, and I also thought, and now think, that the present bill does not furnish the one great necessary remedy for the evil of which we are complaining to-day. We have a suitor, George Rice, who is being injured day by day, who has to come here at great expense, and after months of time consumed in tedious litigation, hopes to get some relief. But there is a much speedier remedy that might be added to or included in the act, and which this Commission, in my humble judgment, should ask of Congress—and I believe I do a service to the Commission in suggesting it—and that is, that injured parties should be authorized to go to a United States judge, wherever a question of interstate commerce is involved, or to this Commission or any member of it, and obtain a writ of peremptory *mandamus* against a railway company, compelling it to move the freight pending litigation upon such terms, with reference to security for, or deposit, of the freight money, as the court or Commission, judge or commisioner, shall determine. Then the business of the suitor would not be injured pending the litigation. Mr. Rice, before he commenced these proceedings, three or four months ago, should have had the right to ask a United States judge to issue a *mandamus* to compel his oil to be moved after depositing the freight money in court, or entering proper security to pay the proper rate, and then, while the litigation was in progress, his business would not be suffering. How inadequate is the common-law remedy on this subject? You sue a great railroad corporation for unjust discrimination, and in two or three years you get a verdict for damages, and then the case is taken up to the Supreme Court of the United States, and in three years more you have your judgment affirmed, but in the meantime your business is ruined and your competitors can well afford to indemnify the railroad company for all damages recovered against them in consideration of the five years' ruin they have succeeded in entailing upon you.

Why should not your Honors have the right, or any judge of a United States court have the right, to issue such a writ, and give Mr. Rice relief during the three or four months in which he has been conducting this case? True, this tribunal is better than the former ones, in that it is more speedy and in that it is final. It is speedy, as compared with the slow and tedious process of a common-law action for damages in the United States courts, but it is by no means complete; it is not yet what it ought to be, and will not be until it can guarantee that the business of a man injured by dishonest discrimination shall be conducted on proper terms by the railway company pending the examination and decision of his case. For often, if his opponent can prevent his transacting business for six months, and take his markets from him, he can well afford to pay the bill of damages even for a victory of but six months' duration.

There is but one other subject to which I desire to refer, and I shall be brief with respect to it, as I propose to leave the argument of that branch of the case to my learned colleague, Mr. Tucker. Shall not Mr. Rice have something to compensate him for the past, as well as relief for the future. The Interstate Commerce Law authorizes *reparation. For the future, he is to have the right to have his oil carried, I say, at the same rate per gallon as the oil of the Standard Oil Company*, but for the past he must have reparation, and reparation must mean damages, or money compensation for the injury already suffered and not relief only in respect to the future. It cannot be possible that an injustice so monstrous as this is, can exist without a remedy for the past. The act under which you sit here gives you the right to award reparation. Reparation means damages, compensation, something that will repair the wrong, and not merely an order that these railway companies shall go and sin no more. Surely they ought to pay Mr. Rice for the injury they have already inflicted upon him. He has a refinery that can produce one hundred thousand barrels a year. He ships but a third or a fourth of that quantity. Why? Because he cannot get rates to enable him to compete with a favored rival, and on that which he does ship, he can make no profit. For this injury he must have some reparation. He must have damages for the losses suffered in the past, and this rule should not only be followed in his case, but in the case of every other shipper in this country who has sufered a like injury by reason of an unjust discrimination on the part of the railway company.

APPENDIX.

This tabulated statement (referred to on pages 2, 3, 4 and 5 of Gowan's argument) I made out from evidence given by these several freight agents before the Inter-State Commerce Commission in November last.

These four roads are taken as a fair sample, and show at a glance the true inwardness and gross enormity of the discriminations existing, even under the Inter-State Act.

They are greater than ever before known in the history of the traffic, and prove conclusively that the rail lines in the carriage of oil have no fears whatever of the Tenth Section of said Act, which imposes a fine of five thousand dollars for each and every offense.

Thus, have the rail roads of this country, by their connivance and coalition, allowed this montrosity, the Standard Oil Trust, to be formulated and built up, in the short space of 15 years, with an aggregated wealth of $200,000,000.

Is it possible, and shall it be said, that this secret and satanic power shall be allowed to continue and set at naught the government of these United States?

GEO. RICE.

Marietta, Ohio, Feb'y 1, 1888.

The following is a fair showing of a few of the discriminations practiced in the cost of the carriage of one gallon refined oil in barrels (car lots) as against one gallon carried in tank cars for the Standard Oil Co.

I DEFY ANY ONE TO BEAT THIS RECORD OR EXPOSURE. IS IT NOT SIMPLY OUTRAGEOUS, ENORMOUS, ASTOUNDING?

LOUISVILLE & NASHVILLE R. R. CO.

	Mills per gal. charged S. O. C.	Mills per gal. charged Geo. Rice	Per cent Discrimination
Louisville to			
Nashville, Tenn.	7	15	114
Chattanooga, "	9.9	19.5	87
Memphis, "	5.7	12	110
Atlanta, Ga.	15.8	36.8	132
Selma, Ala.	15.1	36.5	141
Montgomery, Ala.	13.6	36.5	168
Mobile, Ala.	14.4	24	66⅔
Columbus, Ga.	17.7	40.9	131
Augusta, Ga.	16.2	35.1	116
Pensacola, Fla.	13.5	24	76
Cincinnati to			
Birmingham, Ala.	10.9	47.2	333

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.
(CINCINNATI SOUTHERN.)

Cincinnati to	Mills per gal. charged S. O. C.	Mills per gal. charged Geo. Rice.	Per cent Discrimination.
Lexington, Ky.	4.9	8	63
Chattanooga, Tenn.	10.1	26.4	161
Knoxville, "	9.6	26.4	175
Birmingham, Ala.	10.7	37.6	251
Meridian, Miss.	12.1	44.8	267
Vicksburg, "	11.1	31.2	181
Shreveport, La.	17.3	53.6	209
New Orleans, "	11.8	31.2	164
Atlanta, Ga.	11.7	36.8	214
Macon, "	12.1	36.8	204

NEWPORT NEWS & MISSISSIPPI VALLEY CO.
(Formerly C. O. & S. W.)

Louisville to	Mills per gal. charged S. O. C.	Mills per gal. charged Geo. Rice	
Memphis, Tenn.	4.4	9	100
New Orleans, La.	9.7	15	54
Vicksburg, Miss.	10.7	15	40

ST. LOUIS, IRON MOUNTAIN & SOUTHERN.

St. Louis to	Mills per gal. charged S. O. C.	Mills per gal. charged Geo. Rice	
Houston, Texas	15	53.6	257
Galveston, "	15	53.6	257
Little Rock, Ark.	10	18.2	82
Newport, "	10	18.2	82

California State Library. 9

DEC. 15, 1894

Compliments of ADOLPH SUTRO, Mayor-elect
OF SAN FRANCISCO, CALIFORNIA.

EXTRACTS

FROM THE

Report of the U. S. Pacific Railway Commission

1888

❧

By ROBT. E. PATTISON.

CALIFORNIA STATE LIBRARY

EXTRACTS

FROM THE

Report of the U. S. Pacific Railway Commission, 1888.

By ROBT. E. PATTISON.

Governor of Pennsylvania.

The construction companies or inside combinations that built five of the six roads have destroyed or concealed their books; the exception being the Central Branch; and the Commission has been embarrassed in its work by the refusal or failure of the companies to produce the accounts relating to the actual cost of construction, or to exhibit any paper or documents that would enable the Commission to ascertain the truth as to this most important factor in the investigation. The books of the Credit Mobilier, which built the Union Pacific from Omaha to Ogden; the books of the Contract and Finance Company, which built the Western Pacific from San José to Sacramento, and the Central Pacific from Sacramento to Ogden; the books of Shoemaker & Co., who built the Kansas Pacific; and the accounts of John I. Blair, who built the Sioux City and Pacific Railroad—all these are missing. From the minutes and accounts of the railroad companies, and from fragmentary information gathered from various sources, it is disclosed that the officers of at least three of these companies made false statements under oath, in affidavits now on file in the Interior Department. From these affidavits the following has been compiled:

STOCK TABLE.

Company.	Stock actually paid in.	Stock paid in as sworn to.	Names of deponents	Date of affidavit.
Union Pacific.....	$400,650	$36,762,300	Oliver Ames..... ...	Sept. 27, 1870.
Kansas Pacific....	250,000	5,072,500	R. E. Carr..	Sept. 28, 1872.
Central Pacific....	760,000	54,283,190	Leland Stanford.....	Sept. 18, 1871.
Central Branch. ..	386,700	980,600	R. M. Pomeroy.....	Sept. 21, 1869.
Total.... ...	$1,797, 350	$97,098,590		

It is no answer to the Government that the managers of these companies did only that which the managers of railroads in other sections did. These lines were built upon public credit. They were public highways in the broadest sense of that term. The managers were acting as trustees of a national highway, and they can not plead any lawful justification for making false affidavits, which state that $97,098,590 of stock was actually paid for, when in fact less than two millions had been so paid for.

THEIR RELATIONS TO THE PUBLIC.

The original purpose of Congress, as set forth in the act of July 1, 1862, in granting subsidies for the construction of the Pacific roads, was to promote the public interest, and the companies were made trustees for that purpose; but the public interest has been subordinated by these companies to the stockholding interest, upon the claim that the stockholders owned the railroads and could manage their own business in their own way. Nearly every obligation which these corporations assumed under the laws of the United States, or as common carriers, has been violated. Their management has been a national disgrace. Since the date of their inception they have been conducted upon a purely speculative basis. Their permanent prosperity has been lost sight of, while their managers greedily strove for temporary advantage. For fourteen years the Union Pacific and the Central Pacific were practically free from competition for a stretch of 1,800 miles across the continent. They were independent of many of those disturbing elements which have been pleaded in extenuation of the vicious practices of railroads in other parts of the country, and yet they injected secrecy into their affairs, inaugurated favoritism and corruption in their management, and attempted to destroy competition. They organized pools for the professed purpose of securing certainty, uniformity and permanency in freight rates, but they did not respect the pools which they entered into when immediate advantages could be obtained by a breach of good faith.

Mr. Huntington testified before the Commission that "competition is killing," and that there ought to be only one railroad for the whole country. The aided companies combined with others to tax the communities which they served, and they forced the consuming classes in all sections of the country to contribute to the payment of interest and dividend upon the fictitious capital which they had created. They increased the cost of living. They laid proprietary claim to the traffic of large sections of the country. They squandered millions of their money to "protect" their territorial claims, while expending other millions in encroachments upon the territory claimed by other companies. They constituted themselves the arbiters of trade. They attempted to dictate the channels that trade should follow and fixed rates of transportation that were extortionate. They charged all that the traffic would bear, and appropriated a share of the profits of every industry by charging the greater part of the difference between the actual cost of production and the price of the article in the market. They discriminated between individuals, between localities, and between articles. They favored particular individuals and companies. They destroyed possible competitors, and they built up particular localities to the injury of other localities, until matters had reached such a pass, that no man dared engage in any business in which transportation largely entered without first soliciting and obtaining the permission of a railroad manager. They departed from their legitimate sphere as common carriers and engaged in mining articles for transportation over their own lines. They exerted a terrorism over merchants and over communities, thus interfering with the lawful pursuits of the people. They participated in election contests. By secret cuts and violent and rapid fluctuations in rates they menaced business, paralyzed capital, and retarded investment and development.

THEIR RELATIONS TO THE GOVERNMENT.

During the five years from 1864 to 1869, upon the claim that their roads were fully completed, these companies obtained bonds from the Government; but when the Government called upon them to pay a percentage of their net earnings into the Treasury, as was stipulated in the original contract, they contended that their roads were not fully completed until 1874, and refused to make any payments to the Government, though one of them, the Central Pacific, had been declaring dividends in the mean time. They resisted the claims and demands of the Government at every point, and resorted to every device their ingenuity could invent in their efforts to evade the plain requirements of the law. In transporting troops and supplies for the Government, they violated the contract obligation to charge reasonable rates by charging more than they charged to private shippers for the same kind of service. The reports of the Union Pacific show that the average rates paid by the Government to that corporation were higher than those received by that company from other sources. The same is more or less true of the other bond-aided companies. The overcharges upon the Government by the Central and Union Pacific Companies since 1880, are estimated to have been as follows:

Union Pacific	$802,407.33
Central Pacific	167,558.63

PROFITS OF $278,023,357.63 IN OPERATING THE ROADS.

The reports of these companies show the following figures relating to operation, disclosing a profit or net earnings of $278,023,357.63, equaling fifteen million dollars a year.

EARNINGS TABLE.

Road.	Gross earnings.	Operating expenses.	Net earnings
Union and Kansas Pacific	$315,303 504.66	$169,916,078.90	$145,387,425.76
Central Pacific Railroad, from 1863 to December 31, 1886	274,139,116.27	149,199,102.40	124,940,013.87
Sioux City and Pacific Railroad, from July 30, 1869, to June 30, 1887	9,187,359.50	6,423,596.82	2,763,762.68
Central Branch Union Pacific	12,849,463.47	7,917,308.15	4,932,155.32
Total	$611,479,443.90	$333,456,086.27	$278,023,357.63

OVER $25,000,000 FOR POOLS, REBATES, AND OVERCHARGES.

In addition to the gross earnings given as above, the bond-aided companies received the following sums, which they subsequently paid out on account of pools, subsidies, rebates, overcharges, etc.:

POOLS, REBATES AND OVERCHARGES.

Road.	Pools.	Rebates and overcharges.	Total.
Union Pacific Kansas Pacific	$4,004,512.48	$11,577,091.62	$15,581,604.10
Sioux City and Pacific			401,832.01
Central Pacific			9,882,799.61
Total			$25,866,235.72

LOSSES SUSTAINED BY THE GOVERNMENT.

The Central Pacific and Union Pacific, between them, have paid over $4,000,000 to the Pacific Mail Steamship Company to maintain high rates. To branch lines the Union Pacific, since 1881, has also given various amounts estimated at $2,400,000, and the Central Pacific $520,762.97, on account of constructive mileage. All of the sums paid out for pools, rebates, overcharges, etc., amounting to $25,866,235.72, were deducted by the companies from the gross earnings actually received by them before stating the amount which was reported to the Government as their gross earnings. In other words, they refused to consider and designate this sum of $25,866,235.72 as part of their gross earnings because they subsequently paid it out for pools and rebates. In this respect, as well as in respect to charges for general expenses that should have been charged against auxiliary companies, the reports, as made by the Union Pacific Company to the Government, were erroneous. For the same reasons and also because the Central Pacific Company was charged for and paid expenses incurred by and for the Southern Pacific Company (the case of Senator Norwood being a conspicuous illustration), the reports made by the Central Pacific Company to the Government were erroneous. The losses sustained by the United States on account of erroneous reports and overcharges amounts to over $8,000,000.

PAYMENTS FOR IMPROPER PURPOSES.

Large sums were also applied to improper purposes. In the accounts of the Sioux City and Pacific Railroad Company this item amounted to $263,812.08 for losses incurred in operating the Fremont, Elkhorn and Missouri Valley Railroad, in which the directors of the Sioux City and Pacific Railroad were interested.

In the accounts of the Central Pacific Railroad Company, this diversion of earnings amounted to many millions through contracts made by Messrs. Stanford, Huntington, Hopkins, and Crocker, with themselves, for construction, leases, repairs, etc. They constructed 1,171 miles of adjunct lines, at a cost of $27,216,931.01. On account of that construction in addition to a small cash payment they issued bonds to themselves to the amount of $33,722,000, and stock to the amount of $49,005,800, making a total issue of $82.727,800, of which $55,539,554 represented inflation.

Then, as directors of the Central Pacific, they took leases of their own lines for the Central Pacific for $3,490,828.81 per annum; which was at the rate of nearly 13 per cent.

Fifteen months ago three of these directors contracted with themselves to build an extension of the California and Oregon division of the Central Pacific from Delta to the boundary line of Oregon, a distance of 103 miles. In payment they issued stock to the amount of $8,000,000 and bonds to the amount of $4,500,000, the market value of the stocks and bonds at that time being $8,340,000. The actual cost of construction was $3,505,609, so that they personally profited by their own votes by that single transaction to the extent of $4,834-391. Mark Hopkins is dead, but his interest is still maintained for his estate and heirs.

In following up the dealings of these directors with the Central Pacific Railroad Company and its adjunct companies, it is found that Messrs. Stanford, Huntington, Hopkins, and Crocker received over $142,000,000 in cash and securities through the Contract and Finance Company, the Western Development Company, the Pacific Improvement Company, and dividends of the Central Pacific Railroad Company. In addition to this sum of $142,000,000, they also made large profits in the operations of fifteen or more other companies, which were directly or remotely sapping the revenues of the Central Pacific Company. The total payments by the Central Pacific on account of rentals amounted to $29,912,373.49.

The same company also expended $4,818,355.67, of which the managers decline to give any explanation or to permit others to explain. As the resources of the company have been diminished to the extent of these expenditures, and as the road itself will not yield sufficient to satisfy the Government claim, it is apparent that the United States are eventually the losers by those disbursements, most of which, as shown by the Huntington letters, were applied to corrupt public men and influence legislation.

In the accounts of the Union Pacific, it was found that $38,000,000 of the funds of that company had been expended for the construction of branch lines, that many millions additional were squandered in purchases of bankrupt branch lines at excessive prices, and that the earnings of the express and telegraph service of that company, as well as of the other bond-aided companies, were, in violation of law, placed under the control of express and telegraph companies in which some of the managers of the Union and Central Pacific Companies were largely interested and of which they were the main beneficiaries.

The balance sheet of the Central Pacific for 1886 should have shown a deficit of over $14,000,000 in the profit and loss account, but by omitting from the debit side the accumulated interest which the Government had advanced, amounting to $31,869,475.20, and by marking up its lands in its asset column to $23,500,000, when the actual value was $12,500,000, as appears from the testimony of the company's land agent, the company made a showing of an apparent surplus of over $28,000,000.

The early accounts of the Union Pacific disclose, among other interesting items, the following:

September 12, 1871.

First-mortgage bonds for $247,000, which should be on hand, but which are not	$247,000
United States 110 6 per cent. currency bonds, which should be on hand, but are not	110,000
	$347,000

The book accounts of the Union Pacific prior to 1880, are frequently unsupported by vouchers, and for some years there are practically no vouchers to establish the correctness of the books. Since 1880, there were expenditures, in connection with legislation in Western States, which were not properly vouched for.

The Central Pacific Company also loaned its funds to its officers to enable them to construct the Southern Pacific, a competing line, across the continent.

The accountants of the commission report that no vouchers exist to show disbursements by the Central Branch of the Union Pacific, and that all the vouchers of the Sioux City and Pacific, from 1864 to 1880, are missing, with the exception of a few cash vouchers.

LEGAL EXPENSES.

Large sums were also squandered by some of the bond-aided companies to pay for the services of lawyers to influence legislation, the total legal expenses of the companies being as follows:

Union Pacific and Kansas Pacific	$2,349,554 00
Central Branch	333,661 65
Sioux City and Pacific	37,287 75
Central Pacific	2,361,154 88
Total	$5,081,659 08

A large sum which had been expended by the Central Pacific for legislation was posted under the head of "general expenses." The addition of that sum would materially increase the total payments on account of legal expenses.

LAND PATENTS AND TAX PAYMENTS.

The refusals of the Central Pacific to pay its taxes to the State of California have been so persistent and so flagrant, and extended over so long a period of years, that the Governor of California, on March 24, 1884, issued a proclamation setting forth the fact that for four years the railroads of the State (the Central Pacific) had refused to obey the laws imposing taxes upon their property and calling a special session of the legislature to devise methods for enforcing a compliance with the laws of the State. The Central Pacific had resisted State taxation on the ground (see p. 102, Report of Railroad Commissioners of California for 1883), that it had been constructed under act of Congress of July 1, 1862. When the Commissioners examined Mr. Leland Stanford, in San Francisco, he insisted that the Central Pacific Company was a State, and not a Federal corporation.

The Central Pacific has selected only one-half of its land grant in California that has been surveyed, and it has failed to select 180,000 acres in that State that have been surveyed since the completion of the road.

Of the grant to the Central Pacific in Nevada, 700,000 acres were surveyed at the date of the completion of the road, and about 2,000,000 acres are now surveyed. The company has selected about one-fourth of its land grant in that State.

Of the grant to the Central Pacific in Utah, of which 250,000 acres were surveyed at the date of the completion of the road in 1869, no lands were selected until February, 1884, nearly fifteen years after the completion of the road.

Because of the vicious methods actually pursued by the bond-aided companies the Government has been defrauded of the bulk of its advances, shippers have been taxed to the extent of over $248,000,000, and liabilities to the amount of $389,517,-

265 have been heaped upon the properties; the total liabilities of these companies to the public and Government on Dec 31, 1886, being as follows:

Union Pacific, including St. Joseph and Grand Island guarantee	$203,379,555 00
Central Pacific	171,908,784 00
Sioux City and Pacific	7,392,447 17
Central Branch	6,836,479 16
	$389,517,265 33

These companies have paid out the following sums in interest and dividend:

INTEREST AND DIVIDENDS.

COMPANY.	INTEREST.	DIVIDEND.
Union Pacfiic Kansas Pacific	$82,742,856 28	$28,650,770
Central Branch	1,882,826 10	150,000
Sioux City and Pacific	1,709,618 67	189,280
Central Pacific	53,877,031 15	34,308,055
	$140,212,332 20	$63,298,105

It is not, therefore, a matter of surprise that they are unable to pay the Government debt and that their resources have been diminished to such an extent as to give the Government very little return for its loans.

The officials of the Central Pacific said that the aided portion of that line was not worth more than the first mortgage of $27,855,680, which is prior to the Government lien, thus leaving the Government without any return for its advances. The majority of the Commission recommended an extension of the time for payment of the debts of all the companies for fifty years on certain terms. The testimony shows that, except the Union Pacific, none of these companies have agreed to or will or can accept the terms recommended by the majority. The traffic manager of the Central Pacific testified that his company could not pay the debt and that an extension for an indefinite time would not be sufficient to enable it to do so. The fact is that as to all the companies except the

Union Pacific their bankruptcy is so complete and irretrievable that no part of their indebtedness can ever be recovered by the Government except by immediate compulsory legal process. Extension of time for payment therefore means in reality but an increase of the amount of the debt and the making of its recovery the more hopeless. The bonds of the Union Pacific provided for in the majority report would sell for about 50 cents on the dollar, and the bonds of the other companies would not be negotiable. The actual effect, therefore, of the report of the majority of the Commission, is that its recommendation of extension of the time for payment is impractical and impotent as to all these companies except the Union Pacific, and, if adopted, could only result in the failure of the Government to realize any portion of the indebtedness and would be substantially a gift of that sum to those companies. For this reason, therefore, the recommendation of the majority will be considered only so far as it applies to the Union Pacific Railway Company.

The people of the West should be freed from the incubus of this enormous load. Eventually the consuming classes, and not the stockholders, must pay this bill if extension of time be granted, and it will be ruinous to the communities which are dependent on the Union Pacific if they are forced to bear their share of this great burden, while communities on other roads bear only the burdens of moderate capitalization. So long as the Union Pacific Railway Company is forced to carry this debt, enterprise and development along its line will be measurably repressed.

The extension being unwise and impracticable, there is only one course open to Congress, and that is an immediate winding up of the affairs of all the companies, enabling the Government to withdraw at once from all connection with the running of railroads, or sharing in the profits of their management. There ought to be an end to the partnership between the Government and the Pacific railroads; a speedy and absolute divorce.

The only method by which this result can be reached is that which was suggested by Justice Hunt in the Credit Mobilier cases. It is the alternative pointed out by the Wilson committee of Congress in the event of the failure of the equity proceedings in the United States Courts. It is the course that Congress directed the Attorney-General, by resolution of April 10, 1869 (section 4), to take against the Union Pacific—that is, the forfeiture of the charter.

The beginning of proceedings at this time to cause the forfeiture of the charters of these companies because of their violations of law and failure to keep their contract with the Government is only to anticipate by a few years the result which will be inevitable when the bonds mature in 1895 and 1897. To wait until then before instituting legal proceedings would not avert the result, but would further jeopardize the interests of the Government and increase the amount of the indebtedness. It should be borne in mind that it is a fact admitted by every officer of these roads who testified before the Commission, and overwhelmingly proved by the evidence submitted, that the payment of the debts at maturity, in 1895 and 1897, can under no circumstance be expected. The railroad officials, the Commissioners and every intelligent citizen, concur in the correctness of this statement. Upon forfeiture, the appointment of a receiver should be applied for to provide for the immediate settlement of the Government's debt. This course involves no actuarial computations or involved legal problems. It is the direct path to the complete solution of a tangle into which the Government should never have been drawn. This course is not recommended for the purpose of punishing this company, or its stockholders, for the willful and continuous violation of obligations imposed by law, but to withdraw the Government from further connection with private enterprises. The stockholders would have the same right to buy that others would have.

In this way the Government would cut loose from all participation in railroad management; it would recover its debt, and put its seal of condemnation upon the multiplied wrongs that have marked the administration of that trust.

The capital and indebtedness of the purchasing companies should be limited to the estimates of the cost of reproduction as made by the inspecting engineer of the Commission—66⅔ per cent. in bonds and 33⅓ per cent. in stocks. The purchasing company should be confined solely to the business of a common carrier, operating railroad and telegraph lines, and should be forbidden, directly or indirectly, to invest in the bonds or securities of companies other than railroads, or in railroads that are parallel or competing, or to acquire by purchase or otherwise, any interest or control in any competing or parallel line. The officers of the company should be prohibited from being interested in any competing or parallel lines, and such company should not be permitted to hold any real estate, except such as may be necessary for its legitimate business, and it should be allowed to issue stocks or bonds only for money, labor done, or money or property actually received. The sale should also be made upon the condition that the franchises should be exercised thereafter, subject to the regulation and control of the Government, in the public interest.

Such a course would force other transcontinental lines to a similar basis, and would benefit consumers in all parts of the country. Transportation would be cheapened; the companies would be liberated from the crushing weight of their debts and made useful arteries of commerce, and a reasonable profit would be yielded to honest investments. In addition to the recommendation of the forfeiture of the charters, I would suggest that, through the receiver to be appointed for the Union Pacific, a suit be instituted with like purpose to that begun in 1873, against the Credit Mobilier, and that the Attorney General be instructed to institute proceedings, either civil or criminal, against all persons who have rendered themselves liable for their participation in the issue of stock or the making of mortgages or pledges upon the property or future earnings of the Union Pacific Company without leave of Congress; against those who violated their trusts in connection with the consolidation of the Kansas Pacific, Denver Pacific and Union Pacific in January, 1880; against all persons who have rendered themselves liable through the maladministration of the Central Pacific, Sioux City and Pacific, and Central Branch Union Pacific; against telegraph and express companies, to secure an accounting to the Government for earnings on business done on bond-aided lines, and to require an accounting for lands improperly acquired from the Government, and to force the patenting of lands already granted to the companies.

In applying the remedies necessary for securing the Government indebtedness, the Attorney General should proceed against all persons and corporations who in any way were parties to or participants in the results of any of the illegal and fraudulent acts which characterized the management of these corporations and resulted in the waste and misappropriation of the funds of the companies and consequent depreciation of the government security.

If this recommendation should be adopted, the population of the great West through which the lines of road extend would have these public highways existing and managed as it was intended by law they should be, in the interest and for the benefit of the people, and not as subjects for stock gambling and speculative practices through which enormous fortunes are amassed by railroad officials and favorites, while communities are burdened and private industry repressed. In other words, these roads, as a result of legal purgation, would be free, clear, and clean public highways, honestly and lawfully managed.

The time of the Commission was so limited that it had no opportunity to visit the various localities that are served by the Central Pacific Railroad Company but from the reports of the railroad commission of California, it is apparent that the abuses of power which have characterized the management of the Union Pacific Company were also practiced by the Central Pacific Railroad Company in its relations with shippers and communities. Its conduct in this respect provoked serious political contests in California, and impelled the people of that State to adopt amendments to the State constitution regulating railroads and creating a State commission to protect shippers against the discriminations of the Central Pacific Company. In that State, as in the territory tributary to the Union Pacific, there was interference with the lawful pursuits of the people; and as appears in page 128 of the State railroad commission's report for 1883, there were fears entertained by merchants of retaliation by the railroad company if complaints should be made against it. With the Union Pacific Company, it devised the special-contract system and also attempted, by investing in other enterprises than those of transportation and by pools and combinations, to control trade.

Robert E. Pattison, *Commissioner.*

Washington, *December* 1, 1887.

SECOND ANNUAL REPORT

OF THE

San Francisco and North Pacific Railway Co.

AND

STATEMENT OF ACCOUNTS

FOR THE YEAR ENDING

JUNE 30th, 1891.

DOUGHERTY & CO., PRINTERS.

CALIFORNIA STATE LIBRARY

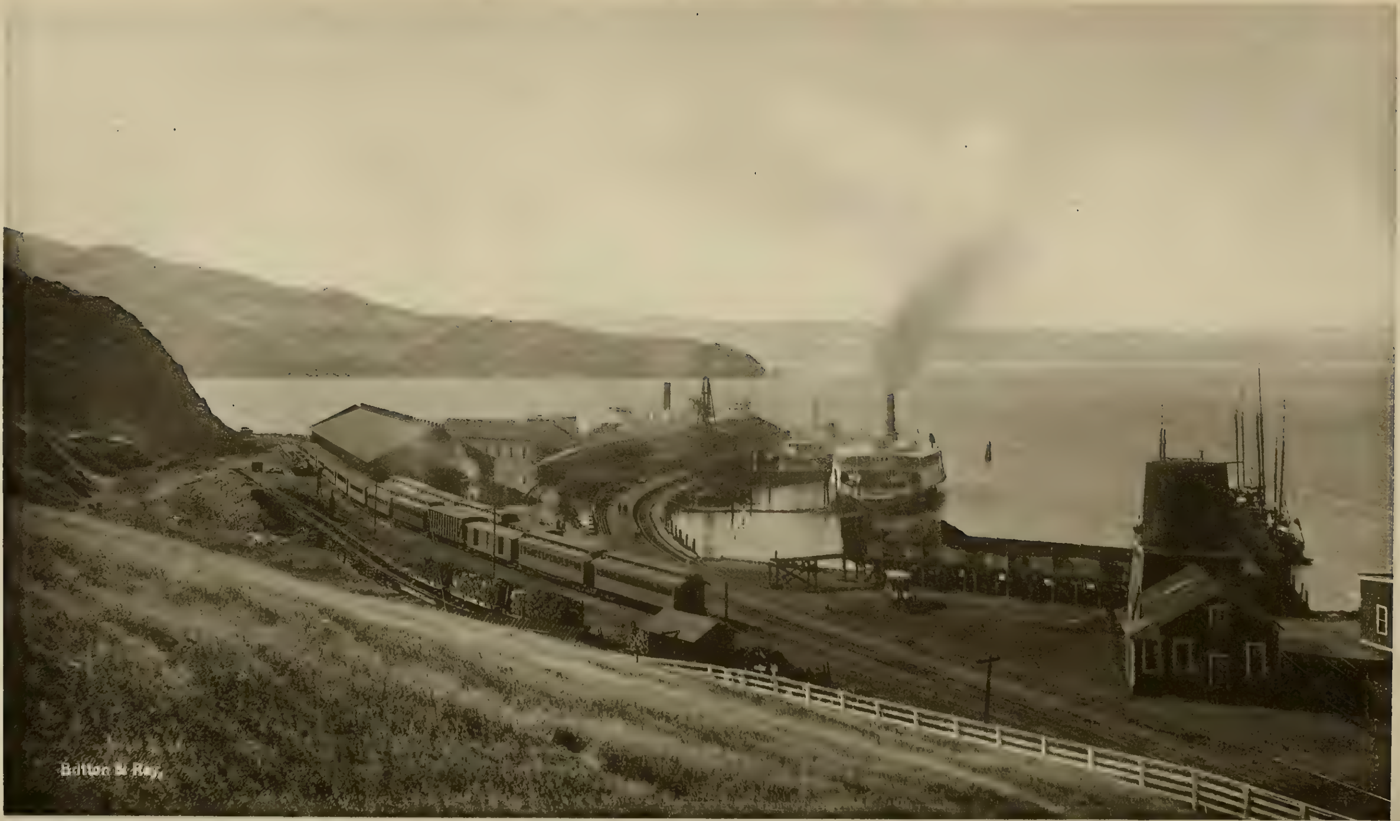
COMPLIMENTS OF

J. F. BURGIN,

PRESIDENT,

S. F. & N. P. R'Y CO.,

SAN FRANCISCO, CAL.



POINT TIBURON, the terminus of the San Francisco and North Pacific Railway, showing the steamers "Ukiah," "James M. Donahue," and "Tiburon," (plying between Tiburon and San Francisco, 6.50 miles), and part of yard.

SECOND ANNUAL REPORT

OF THE

San Francisco AND North Pacific Railway Co.

AND

STATEMENT OF ACCOUNTS

FOR THE YEAR ENDING

JUNE 30th, 1891.

DOUGHERTY & CO., PRINTERS.

TABLE OF CONTENTS.

		PAGE.
List of Directors and Officers		9
Report of President and Directors		11–19
Report of General Manager		21–25
Report of General Counsel		27–30
List of Controller's statements		33
General Balance Sheet	Table A	34–35
Statement of capital expenditure	" B	36
Details of capital expenditure	" C	37–43
Revenue Account	" D	44
Net Revenue Account	" E	45
Details of operating expenses	" F	46–49
Comparative Statement of Earnings for 12 months	" G	50
Comparative Statement of Expenses for 12 months, and net earnings	" H	51
Statistical Table showing receipts and expenditures	" I	52
Statement of passenger traffic	" J	53
Statement of passenger traffic from stations	" K	54
Statement of freight traffic	" L	55
Statement of freight forwarded from stations	" M	56–57
Classification of freight forwarded and percentage of Tonnage	" N	58
Classification of freight forwarded and percentage of Revenue	" O	59
Summary of results of operations	" P	60
Return of rolling stock	" Q	61
Return of floating equipment	" R	62
Statement of length of road and train mileage	" S	63
Statement of movement of freight trains and cars	" T	64
Statement of material and supplies on hand	" U	65
Statement of number of men employed and cost	" V	66
Statement of performance of locomotives and steamers for the year	" W	67
Statement of expenditure under agreement with New York	" X	68
Description of road	" Y	69
Characteristics of road	" Z	70

GENERAL OFFICE, 410 MISSION STREET,
SAN FRANCISCO.

DIRECTORS.

John F. Burgin,	San Francisco, Cal.
Philip N. Lilienthal,	San Francisco, Cal.
Peter J. McGlynn,	San Francisco, Cal.
Charles F. Hanlon,	San Francisco, Cal.
Alfred L. Seligman,	San Francisco, Cal.
Henry T. Scott,	San Francisco, Cal.
Russell J. Wilson,	San Francisco, Cal.

PERSONNEL.

John F. Burgin,	President.
Philip N. Lilienthal,	Vice-President.
Henry C. Whiting,	General Manager.
Alfred L. Seligman,	Treasurer.
Thos. Mellersh,	Secretary and Controller.
Charles F. Hanlon,	General Counsel.
Peter J. McGlynn,	General Passenger and Ticket Agent.
W. H. Menton,	General Freight and Baggage Agent.
W. J. McMullin,	Cashier and Ass't Gen. Pass. and Frt. Agent.
W. G. Corbaley,	Superintendent.
Frank K. Zook,	Chief Engineer.
E. Reynolds,	Master Mechanic.
W. Corbin,	Storekeeper.

Annual meeting held on third Tuesday in January.

San Francisco and North Pacific Railway Company.

San Francisco, Cal., July 15th, 1891.

REPORT OF THE PRESIDENT AND DIRECTORS.

To the Stockholders of the San Francisco and North Pacific Railway Company:

The Board of Directors herewith submit their Second Annual Report, with the accompanying data, showing the physical and financial condition of your property, at the close of the fiscal year ending June 30, 1891.

	MILES OF MAIN AND BRANCH LINES.	MILES OF SIDE TRACKS.	TOTAL LENGTH OF ALL TRACKS.
Tiburon to Ukiah, Main Line	106.00	18.72	124.72
Donahue to Junction with Main Line	5.76	.39	6.15
Fulton to Guerneville	17.61	3.42	21 03
Santa Rosa to Sebastopol	6.25	.15	6 40
Ignacio to Glen Ellen	26 63	1.85	28.48
Total	162.25	24.53	186.78

The length of side tracks has been increased 1.05 miles during the year.

Of the 162.25 miles, 106.20 are laid with 56 lb. steel rails, and the remainder with 50 and 56 lb. iron rails.

There has not been any change in the trestles, which remain at the aggregate length of $36,989\frac{6}{10}$ feet.

Of the bridging:

279 2-10 feet are iron bridges.
585 feet are combination.
984 feet are wooden.

The wooden Howe Truss Span of 181 feet 4 inches in length over the Russian river, on the Guerneville branch, was so generally worn out that a new bridge had to be constructed. In view of the heavy traffic on this branch, it was considered necessary to build a stronger bridge, and accordingly the wooden structure was replaced by a Pratt combination (steel and wood) truss of 184 feet $10\frac{1}{2}$ inches in length, at a total cost of $6,735.30. Although this work was of a betterment nature, the entire expenditure was charged to working expenses.

There are nine tunnels on the line, their aggregate length being 8,985 feet. Of these tunnels six are timbered throughout, the remainder being partly timbered; portions of them having been built through solid basalt rock.

During the year 135^{916} tons of new 56 lb. steel rails have been put in the track, at a total cost of	$5,935.60
Less 134^{356} tons of iron rails taken out of track, the value of which amounted to	$4,233.55
Leaving the net cost	$1,702.05

which has been charged to capital account.

There has also been expended and charged to capital account during the year, the following:

For new rolling stock	$ 1,676.04
For new sidings	458.75
For new buildings	19,510.27
For miscellaneous	87,606.60
For Ukiah extension	583.68
For Guerneville extension	5,461.50
For Sebastopol extension	3,311.61
Total	$118,608.45

The following table shows the general income account of your company for the fiscal year ending June 30th, 1891, in comparison with the previous year.

	YEAR ENDING JUNE 30, 1891.		YEAR ENDING JUNE 30, 1890.	
	PER CENT	AMOUNT.	AMOUNT.	PER CENT
The Gross Earnings for the Year were :				
From passengers	50.02	$416,479 01	$380,454 86	50.37
" freight	43.57	362,834 57	329,070 57	43.57
" mail service	2.54	21,136 15	12,382 24	1.64
" express service	1.93	16,056 69	14,920 55	1.98
" miscellaneous sources	1.94	16,141 12	18,465 46	2.44
Totals	100.00	$832,647 54	$755,293 68	100.00
The Operating Expenses were :				
For conducting transportation	20.72	$172,495 80	$153,497 32	20.32
" motive power	13.07	108,811 96	114,699 62	15.19
" maintenance of cars	2.22	18,526 51	19,588 41	2.59
" maintenance of way	17.09	142,281 02	138,937 00	18.39
" general expenses	9.10	75.737 13	75,060 93	9.94
Totals	62.20	$517,852 42	$501,783 28	66.43
Net earnings for the year	37.80	$314,795 12	$253,510 40	33.57
Fixed and other Payments chargeable against Revenue ;				
For taxes	3.19	$26,610 31	$24,000 00	3.18
" interest on first mortgage bonds	24.82	206,633 33	202,778 90	26.85
" sinking funds	3.00	25,000 00	25,000 00	3.31
Totals	31.01	$258,243 64	$251,778 90	33.34
Surplus revenue	6.79	$56,551 48	$1,731 50	00.23

From the above table it will be seen that the surplus revenue for the year ending June 30th, 1891, was $56,551.48, as against $1,731.50 for the preceding year.

The Company has, therefore, earned a dividend of nearly one per cent on the capital stock during the past year, but, by reason of the surplus having been used for construction purposes, the finances will not admit of any dividend being paid at present.

In comparison with the preceding year, the gross earnings show an increase of $77,353.86, or 10.24 per cent.

The operating expenses show an increase of $16,069.14, or 3.20 per cent.

The net earnings show an increase of $61,284.72, or 24.17 per cent.

There weremoved during the year 192,472 tons of freight, against 194,279 tons the preceding year, a decrease of 1,807 tons, or .92 per cent.

The revenue per ton of freight transported was $1.88, against $1.69 the preceding year, an increase of $0.19 per ton, or 11.24 per cent.

The number of passengers carried was 804,148, against 686,623 the preceding year, an increase of 117,525 passengers, or 17.16 per cent.

The revenue per passenger carried was 51 cents, against 55 cents the preceding year, a decrease of 04 cents per passenger, or 7.27 per cent, but the average receipt per passenger per mile was 2.09 cents, against 2.06 cents, or an increase of 1.43 per cent.

The freight and mixed train mileage was 121,279 miles, against 145,554 miles the preceding year, a decrease of 24,275 miles, or 16.68 per cent.

The passenger train mileage was 234,134 miles, against 221,741 miles the preceding year, an increase of 12,393 miles, or 5.59 per cent.

The gross revenue per mile of road operated was $5,131.88, against $4,655.12 the preceding year, an increase of $476.76, or 10.24 per cent.

The operating expenses per mile of road were $3,191.70, against $3,092.65 the preceding year, an increase of $99.05, or 3.20 per cent.

The net revenue per mile of road operated was $1,940.18, against $1,562.47 the preceding year, an increase of $377.71, or 24.17 per cent.

In March, 1891, a temporary junction with the Southern Pacific Company at Yulupa Siding was made, preparatory to establishing a permanent connection at Schellville, on the Sonoma Valley branch. This junction, we anticipate, will be of great benefit to the producers and shippers along the line of your road, as they are thereby enabled to ship directly to all portions of the United States without breaking bulk or sustaining damage to their products by rehandling at Tiburon, or being drayed in the city of San Francisco from the wharf of this company to other railroad depots as heretofore.

Your company has leased a new pleasure resort, naming it "El Campo," situated on the east shore of Marin County, three and one-half miles from Tiburon. A wharf, pavilion and other buildings are being erected, and it is intended to open this resort by the middle of July.

It is confidently expected that this resort will add largely to the revenue of your company, as its close proximity to San Francisco, and being the only pleasure grounds reached by steamers on this Coast, cannot fail to insure good patronage and become a most popular place for a day in the country. It is proposed to use it for picnics, excursions and family outings. By reason of this resort your company will be enabled to make greater use of their steamers, thereby relieving, in a measure, the strain upon the carrying capacity of your railway, now employed to the fullest limits by the constantly growing excursion traffic.

The new double-ender combination (freight and passenger) steamer "Ukiah," was placed in service in January, 1891, and has proved a complete success, both as to stability and speed. This steamer developed the unusual speed of eighteen knots per hour, and is, undoubtedly, the fastest double-ender ferry boat in the world. She has proved her value to your company on many excursions as a passenger steamer, where it was necessary to carry a large number of passengers, and has given great satisfaction to your company and the public in general. This steamer will supply the wants of shippers along your line of road in transferring the products of the counties traversed, so that cars can be landed in San Francisco without breaking bulk, which heretofore were unloaded at Tiburon, and freight conveyed by steamer or schooner to San Francisco. The old manner of handling freight has been very detrimental to many products shipped from and to points on your road, as well as expensive to your company, by reason of the extra labor in loading and unloading.

In April, 1891, the Schuetzen Society opened new picnic grounds and pleasure resorts near San Rafael, and have expended $60,000 in improvements thereon. This new resort has helped to increase the passenger traffic, and it is an assured fact that your passenger receipts in future years will be greatly augmented by the patronage that will be accorded to this already most popular resort.

Several large canneries have been built at Santa Rosa and Healdsburg, to which we have constructed side tracks. It is the intention of this company to encourage the building of canneries at several other points on your road, to enable the fruit growers to dispose of the products of their orchards and vineyards. The steady development of fruit industries in California marks an era in the prosperity of this wonderful State, and unquestionably this company will receive a proportionate profit therefrom.

During the year of 1889-1890, 2.12 miles of track below Guerneville, known as the Guerne-Murphy Railroad, was purchased and improved at a cost of $36,336.42. According to contract with the Sonoma Lumber Company, an additional extension of 1½ miles of track is now being constructed further into the redwood timber, and the estimated cost of such extension is $15,000. When this work is completed, it is expected that lumber and cord wood shipments will be large, and that this extension will be a source of increased freight revenue to your company.

There has not been any change in the amount of the capital stock, or any increase in the bonded indebtedness of your company. There was paid on account of sinking fund, in accordance with the provision of the mortgage, $25,000, on the first of July, 1890. This amount, together with $743.33, the unexpended balance in the hands of the Mercantile Trust Company, was applied to the redemption of 26 bonds, leaving in the hands of the Trust Company a balance unexpended of $610, to be applied to future redemptions.

The interest was paid semi-annually, as it became due, on the first mortgage bonds, as follows:

On January 1st, 1891	$103,923 33
On July 1st, 1891	103,750 00
Total	$207,673 33

Much of the real estate along the line of your company has been held in large tracts by a few holders. Notably among these holdings is the Coleman tract at San Rafael, which is now about to be placed upon the market and is being divided into small lots, embracing from one to five acres. To facilitate the marketing of this property, your company has erected a small depot in the most desirable location, and propose making this a regular station for passenger traffic.

Another large holding is the Page ranch, embracing some 10,000 acres, at Pages, Sonoma County. This also is to be cut up and offered for sale in tracts of fifty to one hundred acres. Besides these, there are other large tracts to be subdivided in the near future. This action on the part of the owners will be of incalculable benefit to the residents of this section of the county, and cannot fail to largely increase both the freight and passenger traffic.

Adjoining and connecting with Tiburon, is a peninsula that has been named Belvedere. It has recently been sold and subdivided into lots. Many of the lots have been purchased by commercial men of this city, who have built summer houses on this island. Already about twenty houses have been built, and it is expected that a great many more will be constructed in the immediate future. As the climate is unsurpassed, aquatic pleasures unexcelled, and being so accessible that it can be reached in twenty-five minutes by steamer from San Francisco, there can be no doubt but that this island will become very popular, and largely enhance the passenger revenue of your company.

In Sonoma County, near Glen Ellen, the State is constructing and has nearly finished an asylum for feeble-minded children, at an expense of about $150,000. At Ukiah, in Mendocino County, the State has also appropriated a sum of

$350,000 for the construction of an insane asylum, which is now in course of erection. This latter building will cost finally, nearly a million dollars. Both of these institutions will be the means of greatly increasing the freight and passenger traffic.

A new stage road, twelve miles in length, has been constructed from Pieta (a new station four miles south of Hopland) to Highland Springs, and thence into Lakeport, Lake County. The road is of easy grade and much shorter than the old route, and will be the means of increasing the passenger travel to this section of the country.

The wood and charcoal business has fallen off somewhat during the past year, on account of the price of coal resuming its normal rate, as against the abnormal and high price of last year.

In lumber, tanbark, brick, flour, wine and fruit, very satisfactory increases have been obtained. The prospects for a heavy fruit business this year have never been more favorable, and by having connection with the Southern Pacific Company, whereby all classes of freight can be shipped direct from producers to Eastern points, it can conservatively be expected that the freight traffic results will be eminently satisfactory.

In Basalt rock shipments, a decrease of 18,940 tons with a corresponding decrease of $12,485 56 in revenue has occurred. In the previous year this class of freight was 17.44 per cent of the total tonnage, whereas this year it has fallen to 7.72 per cent. The causes for the decline can be briefly stated as follows:

The Board of Supervisors under the last administration, passed an ordinance requiring that six inches of concrete should be put as a foundation under both the Basalt blocks and the Bituminous rock. This ordinance made the work of laying the Basalt blocks so expensive, and was so manifestly in favor of the Bituminous rock, that the Basalt block men immediately ceased shipping. The apathy in the Basalt block market continued until the new administration, when the new Board of Supervisors, after having the matter under consideration for many weeks, passed the following ordinances, which were duly ratified by the mayor:

> "For the Basalt block pavement, it is provided that the roadbed shall first be excavated to a depth of fourteen inches, and the blocks set thin edge up, on a six inch layer of sand."

> "For the Bituminous rock pavement, it is provided that the roadbed shall be excavated to a depth of eight and one-half inches, a six inch layer of concrete being first laid down after the most approved plan, and upon this laid a coating of Bituminous rock two and one-half inches thick."

This action was considered a signal victory for the Basalt blocks. So quickly has the effects of the new ordinance been felt, that already the Basalt block shipments are assuming the usual proportion of your freight traffic, and undoubtedly this business will be greatly enhanced by the present favorable ordinances.

The attention of the stockholders is invited to the General Manager's report, and to the comparative tables and statistical statements furnished by the Controller for the more detailed data as to the operations of your company.

The roadway, structures and equipment are in excellent condition generally, and no efforts have been spared to keep your property up to the standard.

For the satisfactory results obtained and for the efficient services rendered by your officers in the several departments, and all persons employed under their direction, the acknowledgment of the stockholders and directors are due.

Respectfully submitted,

J. F. BURGIN,

President.

San Francisco and North Pacific Railway Company.

OFFICE OF GENERAL MANAGER.

SAN FRANCISCO, July 20th, 1891.

To the President and Board of Directors of the San Francisco and North Pacific Railway Company.

GENTLEMEN:—I herewith respectfully submit the Second Annual Report of the Operating Department of the San Francisco and North Pacific Railway Company, for the year ending June 30th, 1891.

The total train mileage for the year was 389,430 miles, and the total steamer mileage was 38,547 miles.

RENEWALS. TRACK AND ROADWAY.

Tons of steel rail laid to replace iron rails	135	916 lbs.
Tons of second class iron to replace worn out rails	164	
New ties replaced in the main track	38,830	
New ties replaced in sidings	2,800	
Miles of fence constructed	2	
Carloads of ballast distributed on main line	1,200	
Carloads of ballast distributed on the Sonoma Valley branch	650	
Carloads of ballast distributed on the Sebastopol branch	40	
Carloads of ballast for releveling station grounds	110	

Side tracks have been constructed at:

San Rafael,
Ignacio,
Healdsburg,
Harvey's Ranch, Hopland,
Rose's Ranch,
Schellville,
Buena Vista,
Madrone,
Chauvets,
Glen Ellen,

Aggregating 5,546 feet.

New right of way has been obtained, and one-half mile of road-bed near Cloverdale has been removed to it on account of the change in the course of the Russian river.

A temporary connection has been made from the Sonoma Valley branch to the Southern Pacific System, for the interchange of traffic between your road and Eastern points, and an arrangement entered into between the two companies, which should result in increased prosperity to the country traversed by your lines, and a corresponding increase in the traffic of the road.

BRIDGES.

A new combination bridge, 181 feet 4 inch span, over the Russian river, on the Fulton and Guerneville branch, has been constructed, to replace the wooden Howe Truss bridge, and new pile trestle approaches of 60 and 120 feet respectively, constructed.

Trestles and bridges on the main line, between Tiburon and Cloverdale have been rebuilt.

All the piles, caps, stringers and ties, showing weakness or decay, have been replaced.

The Santa Rosa bridge has been repaired, on account of derailment of a locomotive thereon.

Trestles and bridges on the Sonoma Valley branch have been strengthened to carry the heavier traffic of our standard gauge.

200 piles were driven on the Fulton and Guerneville branch; 75 new piles driven on the Tiburon wharf, and extensive repairs made on the ferry slip.

All the bridges, trestles, cattle guards, fences, etc , have been maintained, and the physical condition of all wooden structures has been much improved since my last report.

BUILDINGS.

New station houses have been built at:

Largo,
Preston,
Caliente,
Sebastopol,
Schuetzen Park.

New coal and sand houses have been built at Tiburon, and watchmen's houses at Brickyard and Novato Drawbridges.

Station buildings at Glen Ellen, Vineyard and Schellville, have been raised to conform to the change of gauge.

The Sonoma Hotel at Tiburon has been raised and placed on a new foundation.

Nine station houses have been re-painted.

Freight and passenger platforms have been constructed, wherever required, and general repairs of buildings maintained.

LOCOMOTIVES.

Three Engines have been thoroughly repaired.
Four Engines have had ordinary repairs.
Four Engines painted and varnished.
Three Engines varnished.

The heavy repairs consist of:

Four New Steel Tires to replace old.
One New Driving Wheel.
One New Tender Truck.
Two re-built Tender Trucks.
Two New Smoke Stacks.
Five New Pilots.
One New Cab.
Two New Piston Rods.
Two New Cross Heads.
One New Flue Sheet.
Sixty-four New Wheels.
Six New Axles.
One New Engine Truck.
Two sets of Flues, re-set.
Twelve Engine Tires, turned.
Marine Pile Driver, new tubes, tube sheets and engine thoroughly repaired.
Land Pile Driver, Engine and Coal Hoisting Engine thoroughly repaired.

PASSENGER CARS.

Nine Passenger Cars, thoroughly repaired, repainted and varnished.
Fifteen Passenger Cars, ordinary repairs, repainted and varnished.
Three Passenger Cars, ordinary repairs and varnished.
Fifty-two New Wheels.

FREIGHT CARS.

Twenty-five Box-cars received repairs exceeding	$25 00.
Forty-four Flat-cars received repairs exceeding	25 00.
Nine Hand-cars received repairs exceeding	25 00.
Five Push-cars received repairs exceeding	25 00.

Six Box-cars repainted.
Ten Flat-cars repainted.
One Caboose Car repainted.
Twenty New Wheels.

CONSTRUCTED.

Three Push-cars.
One Section Dump-car.
Eight Baggage Trucks (large.)

One Box-car and one Flat-car have been wrecked; one Flat-car has been burned; and four Flat-cars taken out of service.

STEAMERS.

The new double and ferry transfer steamer "Ukiah," of 2564.42 gross tonnage, was put in service January 8th, 1891, and her performance since that date has been most satisfactory.

The steamer "Tiburon" has been furnished with one new shaft, to replace a broken one, and her engine, boilers and wood work thoroughly repaired, and the steamer repainted.

The steamer "James M. Donahue," has had light repairs during the year, and all the steamers are, at present, in good serviceable condition.

CONSTRUCTION.

The following improvements now under way, and soon to be completed, are:

Extension of the Guerneville branch 1½ miles into the redwood forests, west of Guerneville.

Construction of a wharf and slip at Tiburon, with the necessary tracks for transferring loaded freight cars on to the steamer "Ukiah," to be transported across the bay, and landed on the Union Belt Railroad, now being constructed by the State, thus saving the cost, delay and breakage in transferring freight from cars to steamer, and from steamer to wharf.

Construction of a new wharf and pavilion at the new picnic grounds "El Campo," to be used for picnics and excursion parties.

The following betterments and repairs are respectfully recommended, and should receive your early attention:

New station and siding at Bellevue, to take the place of Oak Grove.

New station and siding at Eldridge, to take the place of Hills, for the use of the new Home for Feeble Minded.

New station at tunnel No. 4, near San Rafael.

New siding at Novato, for a creamery company.

New station and siding at Pieta, the terminus of the new Lake County stage road.

New station at Carrigers.

New station at Pages.

New station at Penn's Grove.

New station at Asti.

New double track trestle bridge over Santa Rosa Creek.

Connection of the tracks between the Sebastopol branch and Santa Rosa yard.

Purchase of 200 tons of steel rail, to replace iron rail on the Fulton and Guerneville branch.

Changing of the straight air brakes on passenger cars, and hand brakes on freight cars, to the automatic brake system.

Painting the steamer "James M. Donahue."

Dredging the bay at Tiburon, for the new transfer steamer "Ukiah," and the slip now being used by the steamer "James M. Donahue."

ACCIDENTS.

No passengers have been killed or injured while traveling on the trains or boats of your company, during the year; two women were slightly injured by jumping from the train before it came to a full stop.

One conductor was knocked from a train by coming in contact with the side of a bridge, and slightly injured.

Two brakemen received slight injuries to their hands while coupling cars.

One section man had his leg broken while dumping a car of ballast.

One tramp was struck and killed by a locomotive, while asleep on the track, and another while crossing the track had his legs broken by being struck by the pilot of the locomotive.

Two freight train accidents have occurred at Brickyard draw-bridge, both caused by the bridge being unlawfully opened by schooner men who wished to pass their schooners through. In the first instance, two cars were run into the creek, slightly damaged, and $300 worth of freight destroyed; and in the other, four cars went into the creek, two of them being badly damaged, and $600 worth of freight destroyed.

A passenger train was derailed near Santa Rosa by the switch being misplaced, the engine and two cars leaving the track, the former running on to the Santa Rosa Creek bridge, and was partially turned over. The damage to locomotive, bridge and cars amounted to about $1,000. No person was injured.

No other accidents to persons or property worth mentioning, have occurred during the year.

The company sustained a severe loss on October 9th, 1890, by the death of Nelson Dennis, who had filled the position of superintendent of bridges and buildings since the road was first constructed.

Acknowledgments are due to the various officers and employees in all departments, for the satisfactory operations of the road during the past year.

Very respectfully,

H. C. WHITING,

General Manager.

San Francisco and North Pacific Railway Co.

OFFICE OF GENERAL COUNSEL.

SAN FRANCISCO, CAL., July 1st, 1891.

J. F. BURGIN, ESQ.,
President S. F. & N. P. R'y Co.

DEAR SIR :—I beg to submit the following report of litigations of the San Francisco and North Pacific Railway Company submitted to my care during the year ending June 30th, 1891.

KATE ARMSTRONG *vs.* S. F. & N. P. R'Y Co.

Superior Court, Sonoma County.

Suit brought to recover $1,074 76 for lumber and merchandise sold and delivered. Compromised before trial and action dismissed.

EUGENIA B. BROOKS *vs.* S. F. & N. P. R'Y Co.

Superior Court, San Francisco.

Suit brought to recover $50,532 for personal injuries sustained while alighting from the train.

Now on demurrer in Department No. 7.

CLAIM OF S. F. N. P. R'Y *vs.* ESTATE OF DRUMMOND, FOR $200 AND INTEREST.

This estate is being wound up and proceedings taken to enforce collection of the claim.

S. W. HOYT *vs.* S. F. & N. P. RY. Co.

Superior Court, San Francisco—Dept. No. 7.

Suit brought to recover $4,200 for services. Jury trial and verdict for $1,000. Now pending on motion for new trial.

S. F. & N. P. RY Co. *vs.* J. W. HENDRY AND JOHN HACKETT.

Superior Court, San Francisco—Dept. No. 4.

Suit against them as bondsmen for $1,000. Judgment obtained and full amount of money collected, with costs.

J. F. Hoadley *vs.* S. F. & N. P. Ry. Co.

Justices' Court, Ukiah Township.

Action brought to recover $165.50 for rent of warehouse and goods sold and delivered. Judgment for plaintiff for $114.25 and costs. Now on appeal Superior Court.

M. J. Morffew and eleven others *vs.* S. F. & S. R. R. R. Co. and S. F. & N. P. Ry. Co.

Superior Court, Marin County.

Suit brought to recover the possession of two tracts of land, including the water front of Tiburon. Same contested. Findings and judgment made and entered in favor of defendants. Now pending on motion for new trial.

S. F. & N. P. Ry. Co. *vs.* Board of Supervisors, Marin County.

Proceedings brought and writ of certiorari obtained in the Superior Court of Marin County, enjoining the collecting of taxes for the fiscal year 1890-91. Compromised by the Board of Supervisors of that county passing a resolution accepting the amount of money offered by the Company as being the just and legal amount.

S. F. & N. P. Ry. *vs.* Board of Supervisors of Sonoma County, and State Board of Equalization.

Proceedings brought in the Superior Court, Sonoma County, and writ of certiorari obtained restraining the collection of taxes for the fiscal year 1890-91. Matter compromised by Board of Supervisors passing a resolution to accept the amount offered by the Company, which the Company deemed legal and correct.

S. F. & N. P. Ry. Co. *vs.* Board of Supervisors of Mendocino County and State Board of Equalization.

Proceedings brought in Superior Court, Mendocino County, and writ of certiorari obtained, enjoining the collection of taxes for the fiscal year 1889–90. Litigation settled by the Board of Supervisors resolving to accept the amount offered by the company as being the just and legal amount.

About $3,000 was saved to the company by these suits.

S. F. & N. P. Ry. Co. *vs.* John Sherry.

Superior Court, San Francisco—Dept. No. 10.

After this suit was brought, and before final judgment, John Sherry who was in debt to this company for the sum of $1,618.30, was adjudicated an insolvent under the State insolvency laws. Proceedings in this suit against him were enjoined, and the matter stands thus at present.

John Sherry—Insolvency.

In this matter, Sherry has been declared bankrupt, and Samuel Newman appointed as assignee, and claim of this company in proper shape, duly verified and filed, and dividend expected thereon. The suit brought by John Hackett against Sherry in another department of this court has resulted in declaring Hackett to be a partner with Sherry, and an attempt is now being made to enforce payment of this bill from John Hackett.

S. F. & N. P. Ry. Co. *vs.* Schell, *et als.*

Superior Court, Sonoma County.

Action brought for condemnation of land in Sonoma County for right of way for the use of this Company. The case is at issue as to most of the defendants, and we are waiting service of process on some of the defendants, who are at present in Europe, and upon whom service is desired personally rather than service by publication.

Paff *vs.* S. F. & N. P. Ry. Co.

Justices' Court, San Francisco.

Action brought to recover $299.00 for loss of baggage by a passenger. Verdict rendered in favor of plaintiff for $70.00 and costs. The action is now on appeal and an attempt is being made to settle it without further trial. The defense is that the articles lost did not come within the meaning of the term baggage.

Claim of S. F. & N. P. Ry. Co. *vs.* E. S. Salomon and the G. A. R. Post, No. 8.

This is a claim for $82.60 for transportation on excursion to Glen Ellen; not yet settled.

PIERCE POWERS *vs.* S. F. & N. P. RY. CO.

Marin County.

Claim for damages by the colliding of the engine with Pierce Powers' team, which he was driving at the time. This matter was contested out of court and finally settled for a small amount.

HENDRICKS *vs.* S. F. & N. P. RY. CO.

Suit for killing horse; settled by payment of reduced sum, to-wit: $50.00.

PEDRELLI *vs.* S. F. & N. P. RY. CO.

Dept. No. 4.

This was a suit brought for damages by plaintiff and finally settled satisfactorily to the Company for the sum of $450.

STEVE BARSETHY *vs.* S. F. & N. P. RY. CO.

Claim for damages for breaking his leg; matter adjusted without payment of any money.

YANDLE & GLYNN—INSOLVENCY.

This firm was allowed by Agent at Santa Rosa to take cargo of lumber without paying freight. As Agent had given bond agreeing not to let freight go without payment, I had freight claim assigned to him and brought suit in his name against Yandle & Glynn, who then went into insolvency, and he is and has been engaged in collecting dividends from the assignee. In the meantime the Company has obtained the whole amount from Agent.

Respectfully submitted,

CHARLES F. HANLON,

General Counsel.

SAN FRANCISCO & NORTH PACIFIC RAILWAY CO.

LIST OF CONTROLLER'S STATEMENTS

FOR THE FISCAL YEAR ENDING JUNE 30TH, 1891.

Table A.	General balance sheet.
Table B.	Statement of capital expenditure.
Table C.	Details of capital expenditure.
Table D.	Revenue account.
Table E.	Net revenue account.
Table F.	Details of operating expenses.
Table G.	Comparative statement of earnings for twelve months.
Table H.	Comparative statement of expenses for twelve months and net earnings.
Table I.	Statistical table, showing receipts and expenditures.
Table J.	Statement of passenger traffic.
Table K.	Statement of passenger traffic from stations.
Table L.	Statement of freight traffic.
Table M.	Statement of freight forwarded from stations.
Table N.	Classification of freight forwarded and percentage of tonnage.
Table O.	Classification of freight forwarded and percentage of revenue.
Table P.	Summary of results of operations.
Table Q.	Return of rolling stock.
Table R.	Return of floating equipment.
Table S.	Statement of length of road and train mileage.
Table T.	Statement of movement of freight trains and cars.
Table U.	Statement of material and supplies on hand.
Table V.	Statement of number of men employed and cost.
Table W.	Statement of performance of locomotives and steamers for the year.
Table X.	Statement of expenditure under agreement with New York.
Table Y.	Description of road.
Table Z.	Characteristics of road.

THOS. MELLERSH,
Controller.

TABLE A.

SAN FRANCISCO AND NORTH

DR. GENERAL BALANCE SHEET,

TO COST OF ROAD:

Cost of properties acquired by purchase from following companies, including all the franchises, rights and lines of road, together with rolling stock, land and water terminals, stations, shops, steamers, and all other property, including construction expenditures, March 19, 1889, to June 30, 1891:

San Francisco and San Rafael Railroad..	9 miles.	
San Francisco and North Pacific Railroad	93 "	
Marin and Napa Railroad	7½ "	
Sonoma Valley Railroad	21½ "	
Cloverdale and Ukiah Railroad..........	29 "	
	160 miles.	$10,327,192.88

STOCK OF MATERIALS, ETC., ON HAND..............	42,319,55
MERCANTILE TRUST COMPANY....................	25,610.00
(Funds in hand for redemption of bonds.)	
SUNDRY DEBTORS	14,152.45
SAN FRANCISCO AND NORTH PACIFIC RAILROAD.....	1,705.76
STATION AGENTS AND CONDUCTORS.................	3,139.56
REMITTANCES IN TRANSIT........................	4,733.85
CASH IN HAND................................	1,426.06
	$10,420,280.11

TABLE A.

PACIFIC RAILWAY COMPANY.

JUNE 30TH, 1891. CR.

By capital account:			
60,000 shares @ $100 per share		$6,000,000.00	
First mortgage bonds:			
4,200 bonds @ $1,000	$4,200,000.00		
Less 50 bonds redeemed and cancelled	50,000.00		
		4,150,000.00	
			$10,150,000.00
Sinking fund paid:			
First Mortgage Bonds			50,000.00
Replacement of rolling stock fund			1,542.80
Sundry creditors:			
For supplies, reserve for taxes, etc			30,280.00
Creditors on pay rolls			26,580.66
Bills payable			30,507.00
Anglo-Californian bank			59,452,64
Net revenue account			71,917.01
			$10,420,280.11

THOS. MELLERSH,

Secretary.

TABLE B.

STATEMENT OF CAPITAL EXPENDITURE

From March 19, 1889, *to June* 30, 1891.

	EXHIBIT.	MARCH 19, 1889, TO JUNE 30, 1890.	JULY 1, 1890, TO JUNE 30, 1891.	TOTAL.
Rolling Stock	A	$ 3,822.97	$ 1,676.04	$ 5,499.01
Track and roadway	B	37,798.73	2,160.80	39,959.53
Buildings	C	2,560.12	19,510.27	22,070.39
Tools and machinery	D	1,397.18	....	1 397.18
Miscellaneous	E	2,441.80	87,606.60	90,048.40
Ukiah extension	F	16,270.30	583.68	16,853.98
Guerneville extension	G	36,336.42	5,461.50	41,797.92
Sebastopol extension	H	106,254.86	3,311.61	109,566.47
		$ 206,882.38	$ 120,310.50	$ 327,192.88

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT A.

ROLLING STOCK.

	MARCH 19, 1889 TO JUNE 30, 1890.	JULY 1, 1890 TO JUNE 30, 1891.
One combination coach, (built at Tiburon shops)...	$2,702 07	
Two passenger coaches, (Narrow Gauge)....		$1,500 00
New box-cars, cost of completing, (built at Tiburon shops)...........	979 60	
Three dump cars (built at Tiburon shops)......	141 30	60 35
Three push cars................		115 69
	$3,822 97	$1,676 04
Total, - - - -	$5,499 01	

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT B.

TRACK AND ROADWAY.

		March 19, 1889 to June 30, 1890.	July 1, 1890 to June 30, 1891.
MAIN LINE:—			
Replacing iron rails with new 56 lb. steel rails.....		$32,545 58	$1,702 05
New steel (2,459.^{1688} tons)..........	$108,206 68		
Less iron rails (2,458.^{356} tons)......	73,959 05		
	$34,247 63		
SIDINGS:—			
Tiburon (1,000 feet).......		1,004 80	
Surfacing..........................	$ 82 25		
Rails, fastenings and laying (19 tons)	850 55		
Cross ties and laying (180 ties).......	72 00		
	$1,004 80		
San Rafael crossing (392 feet)....................		375 61	
Rails, fastenings and laying (5 tons)..	$263 11		
Cross ties and laying (301 ties)......	112 50		
	$375 61		
Caliente (600 feet).........................		469 64	
Rails, fastenings and laying (6.^{1960} tons)	$315 07		
Cross ties and laying (377 ties).......	154 57		
	$469 64		
Petaluma (2,300) feet)......................		2,927 00	
Grading, surfacing and ballasting....	$ 700 98		
Rails, fastenings and laying (30 tons)	1,898 62		
Cross ties and laying (898 ties).......	327 40		
	$2,927 00		
Santa Rosa (463 feet)............................		476 10	
Grading..................	$ 49 00		
Rails and laying (7.^{1348} tons).........	359 20		
Cross ties and laying (194 ties).......	67 90		
	$476 10		
Healdsburg (668 feet)............................			
Rails, fastenings and laying (10.^{298} tons)	$458 75		458 75
		$37,798 73	$2,160 80
Total, - - - - - -		$39,959 53	

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT C.

BUILDINGS.

		March 19, 1889 to June 30, 1890.	July 1, 1890 to June 30, 1891.
New warehouse and wharf at Lower Lake........		$ 794 92	Cr. $ 40 50
New turntable, Fulton........................		781 70	
Remodeling general offices..................		983 50	557 58
New sand house, Tiburon..............			174 54
New ferry slip, Tiburon.....			14,959 40
Cost of constructing apron and hoisting gear, as per contract	$6,950 00		
Raising, filling and grading approach, constructing bulkhead, piling, driving, capping and painting, rails and laying, etc.......................	8,009 40		
(NOT COMPLETED).			
El Campo picnic grounds......................			2,297 26
Clearing and preparing grounds......$	515 60		
Constructing dock......	1,390 18		
Building pavilion....................	199 78		
Sundries..........	191 70		
(NOT COMPLETED).			
New depot, Schuetzen Park...................			824 45
New depot, tunnel No. 4, (not completed).......			426 04
New depot, Caliente			311 50
		$2,560 12	$19,510 27
Total, - - - -		$22,070 39	

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT D.

TOOLS AND MACHINERY.

	March 19, 1889 to June 30, 1890.	July 1, 1890 to June 30, 1891.
New flue cleaner	$ 377 18	
New patterns	1,020 00	
	$1,397 18	

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT E.

MISCELLANEOUS.

	March 19, 1889 to June 30, 1890.	July 1, 1890 to June 30, 1891.
Booneville extension,—reconnaissance	$ 507 60	
Lakeport extension,—reconnaissance	164 25	
Eureka extension,—reconnaissance	883 85	
New office furniture	886 10	$ 102 50
New baggage trucks		200 34
Cost of widening gauge of Sonoma Valley railroad; equipping Cloverdale and Ukiah railroad; and construction of new steamer, in excess of amount provided therefor. (For details, see table X)		87,303 76
	$2,441 80	$87,606 60
Total, - - - -	$90,048 40	

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT F.

CLOVERDALE AND UKIAH EXTENSION.

		MARCH 19, 1889 TO JUNE 30, 1890.	JULY 1, 1890 TO JUNE 30, 1891
Ballasting (cost of finishing)		$ 1,261 65	
Clearing slides (one-half cost, as agreed)		10,055 17	
New stone culvert		218 05	
New cattle guards		931 62	
New turntable, Ukiah (part cost)		119 90	
New telegraph line (850 poles and freight)		2,008 75	
New depot, Preston (cost of plans)		24 00	$ 141 16
New depot, Largo			242 84
NEW SIDINGS :—			
Preston (600 feet)		586 06	
Ballasting and surfacing	$ 18 04		
Rails, fastenings and laying, (10 tons)	486 82		
Cross ties and laying (203 ties)	81 20		
	$586 06		
Hopland (230 feet)		69 23	199 68
Rails, fastenings and laying ($3.^{1792}$ tons)	$178 08		
Cross ties and laying (55 ties)	19 25		
Switches and frogs	71 58		
	$268 91		
Ukiah (882 feet)		995 87	
Rails, fastenings and laying (16¾ tons)	$862 87		
Cross ties and laying (380 ties)	133 00		
	$995 87		
		$16,270 30	583 68
Total, - - - -		$16,853 98	

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT G.

GUERNEVILLE EXTENSION.

		MARCH 19, 1889 TO JUNE 30, 1890.	JULY 1, 1890 TO JUNE 30, 1891.
Purchase of track, right of way, etc., (2.12 miles)...		$24,548 06	
Excavating and grading..............................			$2,090 60
Ballasting and surfacing..............................		450 00	
Track tools..............................			428 57
Rails, fastenings and laying (204.^{764} tons)..............		4,802 55	2,748 83
Renewing trestles and piling..........................		413 58	38 00
Engineering expenses..............................			155 50
Interest account..............................		594 37	
Discount on securities sold for construction..........		5,000 00	
NEW SIDINGS :—			
Guerneville (257 feet)...........................		266 51	
Grading..............................	$ 41 50		
Rails, fastenings and laying (4¾ tons).	225 01		
	$266 51		
Mission (349 feet)...........................		261 35	
Grading..............................	$ 29 00		
Rails, fastenings and laying (4.^{164} tons)	179 85		
Cross ties and laying (150 ties)........	52 50		
	$261 35		
		$36,336 42	$5,461 50
Total, - - - - - -		$41, 797 92	

TABLE C.

CAPITAL EXPENDITURE.

EXHIBIT H.

SEBASTOPOL EXTENSION,—6.25 *MILES.*

	March 19, 1889 to June 30, 1890.	July 1, 1890 to June 30, 1891.
Engineering Expenses	$ 3,043 30	
Right of way	18,811 20	$ 1 25
Grading	5,885 20	70 00
Surfacing and lining	780 05	
Bridges and trestles	3,508 20	
Rails, fastenings and laying (565¼ tons)	22,458 93	
Cross ties and laying (18,627 ties)	6,871 61	
Ballasting	5,257 09	
Cattle guards	928 93	
Fencing	4,565 50	25 47
Track tools	372 26	
Slides and washouts	55 00	
Platforms and crossings	68 28	60 77
New cattle chutes		44 08
Interest account	1,310 93	
Discount on securities sold for construction	10,000 00	
New rolling stock—eight passenger coaches	22,206 59	1,497 76
New depot, Sebastopol		1,612 28
NEW SIDINGS :—		
Walker's (400 feet)	131 79	
Switches and fastenings $ 131 79		
	$106,254 86	$ 3,311 61
Total, - - - - -	$109,566 47	

TABLE D.

Dr. REVENUE ACCOUNT, YEAR ENDING JUNE 30th, 1891. Cr.

Year Ending June 30, 1890.	Percentage on Gross Receipts.		Exhibit.	Year Ending June 30, 1891.	Percentage on Gross Receipts.	Year Ending June 30, 1890.	Percentage on Gross Receipts.		Year Ending June 30, 1891.	Percentage on Gross Receipts.
		To Operating Expenses:						By Traffic Receipts:		
*$153,497.32	20.32	Conducting Transportation.......	A	*$172,495.80	20.72	$380,454.86	50.37	Passenger..............	$416,479.01	50.02
114,699.62	15.19	Motive Power....................	B	108,811.96	13.07	329,070.57	43.57	Freight	362,834.57	43.57
19,588.41	2.59	Maintenance of Cars.............	C	18,526.51	2.22	12,382.24	1.64	Mail Service...........	21,136.15	2.54
138,937.00	18.39	Maintenance of Way	D	142,281.02	17.09	14,920.55	1.98	Express Service........	16,056.69	1.93
75,060.93	9.94	General Expenses................	E	75,737.13	9.10	12,101,90	1.60	Rents............	12,643.85	1.52
24,000,00	3.18	Taxes................		26,610.31	3.19	6,363.56	.84	Miscellaneous..........	3,497.27	.42
$525,783.28	69.61			$544,462.73	65.39					
229,510.40	30.39	Balance to Net Revenue Account....		288,184.81	34.61					
$755,293.68	100.00			$832,647.54	100.00	$755,293.68	100.00		$832,647.54	100.00

* The cost of operating steamers, included in Conducting Transportation for year ending June 30, 1890, is 9.03 per cent.

* The cost of operating steamers, included in Conducting Transportation for year ending June 30, 1891, is 10.45 per cent.

TABLE E.

NET REVENUE ACCOUNT.

Dr.		Cr.	
To Interest on $4,150,000 00 First Mortgage Bonds, July 1st, 1890, to June 30th, 1891	$207,673 33	By Balance of Revenue Account:	
		From year ending June 30, 1890	$ 15,365 53
		For year ending June 30, 1891	288,184 81
“ Sinking Fund, for First Mortgage Bonds, redeemed and cancelled, as provided for in clause 4 of Mortgage, dated January 1st, 1889	25,000 00	“ Premium on First Mortgage Bonds redeemed and cancelled	1,040 00
“ Balance carried forward	71,917 01		
	$304,590 34		$304,590 34
		By Balance, June 30, 1891	$ 71,917 01

TABLE F.

OPERATING EXPENSES.

EXHIBIT A.

CONDUCTING TRANSPORTATION.

	For year ending June 30, 1890	For year ending June 30, 1891
Agents and clerks	$ 21,829 50	$ 23,300 72
Train dispatchers and telegraph expenses	2,656 18	2,597 31
Advertising and soliciting agents	19,467 22	17,186 04
Conductors, brakemen and baggagemen	22,562 35	23,040 45
Labor—loading and unloading freight	6,946 36	7,086 89
Station expenses	3,427 12	3,026 49
Watchmen	743 25	768 85
Train expenses	4,147 23	3,951 78
Injuries to persons	729 25	1,012 25
Loss and damage—goods, baggage and property	1,044 84	1,930 07
Wrecking	48 30	224 89
Live stock killed by trains	821 50	718 20
Superintendence	865 87	583 20
	$ 85,288 97	$ 85,427 14
Steamer repairs	$ 4,942 79	$ 11,753 13
Steamer expenses and wages of crews	34,409 36	37,790 94
Dock repairs	418 41	3,220 59
Fuel for steamers	28,437 79	34,304 00
	$ 68,208 35	$ 87,068 66
Total conducting transportation, - -	$153,497 32	$172,495 80

TABLE F.

OPERATING EXPENSES.

EXHIBIT B.

MOTIVE POWER.

	For year ending June 30, 1890.	For year ending June 30, 1891.
Wages of engineers and firemen	$20,217 70	$21,077 90
Engine repairs	14,706 76	12,131 55
Fuel for engines and shops	65,469 68	61,650 37
Oil and waste for engines	2,361 19	1,970 29
Watching and cleaning engines	3,301 37	3,355 75
Water supply	2,760 73	2,107 47
Tools and machinery	2,690 82	2,264 26
Watchmen	731 95	763 39
Superintendence	2,739 42	3,490 98
Engine hire Cr.	280 00	
	$114,699 62	$108,811 96

TABLE F.

OPERATING EXPENSES.

EXHIBIT C.

MAINTENANCE OF CARS.

	For year ending June 30, 1890.	For year ending June 30, 1891.
Passenger and baggage cars	$8,220 92	$7,425 45
Freight cars	8,914 73	8,519 14
Oil and waste for cars	801 12	621 98
Superintendence	1,651 64	1,959 94
	$19,588 41	$18,526 51

TABLE F.

OPERATING EXPENSES.

EXHIBIT D.

MAINTENANCE OF WAY.

	For year ending June 30, 1890.		For year ending June 30, 1891.	
Bridges.				
Repairs, including superstructure, substructure and watching.....		$ 13,131 75		$ 26,792 27
Buildings:				
Station houses and platforms..................	$ 2,296 09		$ 3,065 62	
Stock pens and chutes..	171 78		244 68	
Coal platforms, chutes and trestles................	146 67		34 25	
Water tanks, pump houses, etc....	411 66		305 77	
Machine and car shops .	2,935 80		1,074 26	
Section and tool houses..	86 26		27 40	
Crossings...............	396 89		452 88	
Miscellaneous...........	1,553 98		1,444 21	
		7,999 13		6,649 07
Track and roadway:				
Replacing rails: **1890.** **1891.** 589 ^{837} tons; 164.^{877} tons.	$22,282 72		2,927 10	
Replacing ties: **1890.** **1891.** 22,254 ties; 38,830 ties.	12,150 56		20,439 76	
Switches and frogs......	642 97		881 65	
Ballasting and surfacing	39,846 99		48,958 54	
Clearing right of way ..	4,500 27		4,608 66	
Cattle guards and fencing	1,201 33		4,140 25	
Ditching and scaling cuts	2,196 33		5,265 40	
Filling trestles..........	....		1,171 93	
Slides and washouts.....	21,016 77		3,080 01	
Telegraph repairs........	244 95		20 68	
Track tools...	2,512 44		1,733 72	
Tunnel timbering and arching.			466 82	
Watching.............	2,350 90		3,048 68	
Wrecking.	166 61		1,112 02	
Station grounds and building dams	2,797 78		3,151 60	
Superintendence.........	5,895 50		8,832 86	
		$117,806 12		108,839 68
Totals, maintenance of way	-	$138,937 00		$142,281 02

TABLE F.

OPERATING EXPENSES.

EXHIBIT E.

GENERAL EXPENSES.

	For year ending June 30, 1890.	For year ending June 30, 1891.
President's and General Manager's offices........	$16,582 58	$14,881 12
Secretary and Controller's office......	9,012 15	12,627 27
Superintendent's office	2,644 93	3,249 80
General Passenger and Ticket Agent's office......	3,497 41	5,686 40
General Freight and Baggage Agent's office......	4,066 29	4,144 12
Cashier's office...........	1,267 21	1,680 10
Legal service and expenses	7,517 57	9,441 43
Insurance.................................	3,275 00	4,084 58
Rents, including rents of slips for steamers, general offices, etc........................	12,687 50	11,920 00
Interest and exchange......................	687 67	279 75
Incidentals.............	13,822 62	7,742 56
	$75,060 93	$75,737 13

TABLE G.

COMPARATIVE STATEMENT OF EARNINGS FOR TWELVE MONTHS,

Ending June 30, 1891.

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Passenger..................	$43,506.80	$41,359.72	$38,763.05	$36,062.60	$31,720,87	$27,870.45	$25,380.00	$20,535.65	$27,640.00	$35,010.20	$43,893.49	$44,736.18	$416,479.01
Freight....................	30,409.89	37,799.47	44,323.28	51,060.28	33,114.43	25,624.56	19,922.84	17,180.94	22,126.19	23,111.40	26,764.87	31,396.42	362,834.57
Mail.......................	1,000.00	1,750.00	1,750,00	1,750.00	1,750.00	1,750.00	1,750.00	1,750.00	1,750.00	1,750.00	2,193.07	2,193.08	21,136.15
Express.......	1,643.98	1,523.30	1,303.50	1,209.66	1,057.35	1,091.67	1,168.55	1,022.48	1,292.96	1,565.87	1,687.26	1,490.11	16,056.69
Rents......................	1,107.20	1,206.20	1,026.20	1,034.20	974.20	1,116.95	999.45	960.45	987.45	1,069.05	1,083.45	1,079.05	12,643.85
Miscellaneous............	313.01	227.12	362.67	317.15	258.58	260.12	239.45	326.60	306.62	288.10	287.56	310.29	3,497.27
Total for year 1891.........	$77,980.88	$83,865.81	$87,528.70	$91,433.89	$68,875.43	$57,713.75	$49,460.29	$41,776.12	$54,103.22	$62,794.62	$75,909.70	$81,205.13	$832,647.54
Total for year 1890.........	83,256.39	82,240.01	80,117.91	71,406.65	61,852.26	44,430.79	35,470.03	36,564.66	49,553.73	59,207.75	70,296.58	80,896.92	755,293.68
Increase...................	....	$1,625.80	$7,410.79	$20,027.24	$7,023.17	$13,282.96	$13,990.26	$5,211.46	$4,549.49	$3,586.87	$5,613.12	$308.21	$77,353.86
Decrease...................	$5,275.51	....	....	....	....	....	....	....	....	....	....	....	....

TABLE H.

COMPARATIVE STATEMENT OF EXPENSES FOR TWELVE MONTHS,

Ending June 30, 1891.

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Conducting transportion..	$20,409.65	$13,101.89	$13,155.13	$14,345.25	$14,057.38	$13,543.75	$13,541.07	$13,618.55	$12,986.27	$14,645.96	$14,800.55	$14,290.35	$172,495.80
Motive power............	10,296.01	9,365.73	9,668.29	10,381.54	8,879.32	8,639.74	7,923.92	7,117.98	7,623.60	9,386.56	9,743.77	9,785.50	108,811.96
Maintenance of way......	9,639.53	12,293.85	13,254.25	10,304.06	14,954.04	17,033.33	12,277.04	10,111.74	12,480.09	10.391.29	10,271.79	9,270.01	142,281.02
Maintenance of cars......	1,025.24	1,501.43	1,319.84	1,574.70	1,216.85	1,656.96	1,552.42	1,644.92	1,628.89	1,561.20	2,263.77	1,580.29	18,526.51
General expenses (including taxes)................	8,212.52	8,969.07	9,114.39	8,290.64	8,632.17	9,091.27	8,675.84	8,938.50	8,830.60	8,223.54	7,718.88	7,650.02	102,347.44
Total for year 1891.........	$49,582.95	$45,231.97	$46,511.90	$44,896.19	$47,739,76	$49,965.05	$43,970.29	$41,431.69	$43,549.45	$44,208.55	$44,798.76	$42,576.17	$544,462.73
Total for year 1890........	45,516,26	44,600.03	47,950.15	43,522.56	41,573.43	37,945.72	39,991.84	40,728.32	45,009.13	43,486.21	51,163.92	44,295.71	525,783.28
Increase..................	$4,066.69	$631.94	....	$1,373.63	$6,166.33	$12,019.33	$3,978.45	$703.37	....	$722.34	....	....	$18,679.45
Decrease..................	....	....	$1,438.25	....	....	....	... .	....	$1,459.68	....	$6,365.16	$1,719.54	....
Net earnings, 1891.	$28,397.93	$38,633.84	$41,016.80	$46,537.70	$21,135.67	$7,748.70	$5,490.00	$344.43	$10,553.77	$18,586.07	$31,110.94	$38,628,96	$288,184.81
Net earnings, 1890.........	$37,740.13	$37,639.98	$32,167.76	$27,884.09	$20,278.83	$6,485.07	*$4,521.81	*$4,163.66	$4,544.60	$15,721.54	$19,132.66	$36,601.21	$229,510.40

* Deficit.

TABLE I.

STATISTICAL TABLE, SHOWING THE RECEIPTS AND EXPENDITURES

For the Years ending June 30th, 1890 and 1891.

			June 30, 1890.	June 30, 1891.
GROSS EARNINGS :—				
Passenger			$380,454 86	$416,479 01
Freight			329,070 57	362,834 57
Mail service			12,382 24	21,136 15
Express service			14,920 55	16,056 69
Miscellaneous			18,465 46	16,141 12
Total			$755,293 68	$832,647 54
OPERATING EXPENSES :—				
Conducting transportation			$153,497 32	$172,495 80
Motive power			114,699 62	108,811 96
Maintenance of cars			19.588 41	18,526 51
Maintenance of way			138,937 00	142,281 02
General expenses			75,060 93	75,737 13
Total			$501,783 28	$517,852 42
Net Earnings			$253,510 40	$314,795 12
Fixed and other Payments Chargeable against Revenue :—				
For taxes			$24,000 00	$26,610 31
Surplus			$229,510 40	$288,184 81
	1890.	1891.		
Interest on Bonds	$202,778 90	$206,633 33		
Sinking fund	25,000 00	25,000 .00		
			$227.778 90	$231,633 33
Net Surplus			$1,731 50	$56,551 48
Revenue per mile of road operated			$4,655 12	$5,131 88
Expenses per mile of road operated			$3,092 65	$3,191 70
Percentage of expenses to revenue			66.43%	62.20%
Net revenue per mile of road operated			$1,562 47	$1 940 18
Fixed and other charges per mile of road operated			$1,551 79	$1,591 64
Number of passengers carried			686,623	804.148
Number of passengers carried one mile			18,410,535	19,835,773
Revenue per passenger			$0 55	$0 51
Average distance hauled			miles, 26.81	miles, 24.66
Revenue per passenger per mile			cents, 2.06	cents, 2.09
Expense per passenger per mile			cents, 1.51	cents, 1.45
Net revenue per passenger per mile			cents, 0.55	cents, 0.64
Tons of freight moved			194,279	192,472
Tons of freight moved one mile			7.458,210	8,299 391
Revenue per ton of freight			$1.69	$1 88
Average distance hauled			miles, 38.39	miles, 43 12
Revenue per ton per mile			cents, 4.41	cents, 4,37
Expense per ton per mile			cents, 2.99	cents. 2.76
Net revenue per ton per mile			cents, 1.42	cents, 1.61
CHARGES AGAINST CAPITAL :				
For rolling stock, tools and machinery			$ 27,426 74	$ 90,477 56
For roadway, structures, etc			179,455 64	29,832 94
			$206,882 38	$120.310 50
Total,			$327,192 88	

TABLE J.

STATEMENT OF PASSENGER TRAFFIC.

Year ending June 30, 1891.

MONTH.	Number of Passengers Carried.	Receipts.	Number of Passengers Carried One Mile.	Average Number of Miles Each Passenger Carried.	Average Receipts per Pass'ger	Average Receipts per Passenger per Mile in Cents.
July..........	88,726	$ 43,506 80	2,203,380	24.83	$0 49	1.97
August........	79,101	41,359 72	1,873,165	23.68	52	2.20
September ...	67,845	38,763 05	1,728,968	25.49	57	2.24
October	61,266	36,062 60	1,599,737	26.11	58	2.25
November	55,487	31,720 87	1,318,707	23.76	57	2 40
December ..	47,847	27,870 45	1,132,549	23.67	58	2.46
January	46,083	25,380 00	1,065,463	23.12	55	2.38
February	38,407	20,535 65	874,882	22.77	53	2.34
March	50,606	27,640 00	1,165,589	23.03	54	2.37
April.	73,548	35,010 20	1,930,321	26.24	47	1.81
May..........	100,382	43,893 49	2,640,856	26.30	43	1.60
June..........	94,850	44,736 18	2,302,156	24.27	47	1.94
Total for year 1891.	804,148	$416,479 01	19,835,773	24.66	$0 51	cts. 2.09
Total for year 1890.	686,623	$380,454 86	18,410,535	26.81	$0 55	cts. 2.06

TABLE K.

STATEMENT OF NUMBER OF PASSENGERS FROM STATIONS, AND REVENUE THEREFROM.

AGENCIES.	For Year ending June 30, 1890.		For Year ending June 30, 1891.	
	Number of Passengers.	Revenue.	Number of Passengers.	Revenue.
San Francisco	358,913	$187,241 45	416,141	$195,990 67
Tiburon	22,969	2,687 00	25,312	3,350 95
San Rafael	76,684½	13,251 90	99,170	17,154 60
Ignacio	1,376	631 40	1,325	604 55
Novato	4,087½	2,256 80	3,833	2,003 90
Petaluma	28,794½	24,349 45	36,052	28,895 30
Santa Rosa	38,779	40,942 35	42,689	42,753 45
Fulton	3,040½	2,349 80	3,020	2,215 70
Windsor	2,009	2,008 45	2,342	2,281 80
Healdsburg	11,725½	14,977 70	13,311	15,767 40
Littons	967½	1,021 60	637	626 75
Geyserville	3,025½	2,481 05	3,243	3,259 65
Cloverdale	6,948½	12,363 25	7,013	11,205 35
Hopland	2,691½	4,262 20	3,208	4,844 60
Ukiah	8,141	23,970 90	10,847	26,818 95
Guerneville	4,229	5,059 00	4,670	5,701 35
Sonoma	4,158½	3,859 30	4,388	3,741 80
Glen Ellen	1,481½	1,124 45	2,095	1,532 15
Sebastopol	552	301 70	7,185	4,415 15
Conductors	32,844	15,953 35	36,106	18,947 50
Excursions, stage lines, etc.	73,205½	19,361 76	81,561	24,367 44
Totals	686,623	$380,454 86	804,148	$416,479 01

TABLE L.

STATEMENT OF FREIGHT TRAFFIC

For Year ending June 30, 1891.

MONTH.	No. Tons Hauled.	RECEIPTS.	Number Tons Hauled One Mile.	Average Miles Hauled.	Average Receipts Per Ton.	Average Receipts Per Ton Per Mile. In Cents.
July..........	15,928	$ 30,409 89	744,204	46.72	$1 91	4.08
August.......	19,202	37,799 47	866,031	45.10	1 96	4.36
September....	20,055	44,323 28	983,717	49.05	2 21	4.50
October	23,500	51 060 28	1,161,404	49.42	2 17	4.39
November ...	18,278	33,114 43	766,347	41.92	1 81	4.32
December	14,505	25,624 56	631,597	43.54	1 76	4.05
January	13,179	19,922 84	421,528	31.98	1 51	4.72
February......	12,774	17,180 94	463,456	36.28	1 34	3.70
March.	13,037	22,126 19	488,939	37 50	1 69	4.52
April.........	12,736	23,111 40	497,784	39.08	1 81	4.64
May...	14,600	26,764 87	600,920	41.16	1 83	4.45
June.........	14,678	31,396 42	673,464	45.88	2 14	4.66
Total, 1891 .	192,472	$362,834 57	8,299,391	43.12	$1 88	cts. 4.37
Total, 1890 .	194,279	$329,070 57	7,458,210	38.39	$1 69	cts. 4.41

TABLE M.

STATEMENT OF FREIGHT FORWARDED FROM STATIONS AND REVENUE DERIVED THEREFROM.

STATIONS.	For Year Ending June 30, 1890.		For Year Ending June 30, 1891.		STATIONS.	For Year Ending June 30, 1890.		For Year Ending June 30, 1891.	
	TONS.	REVENUE.	TONS.	REVENUE.		TONS.	REVENUE.	TONS.	REVENUE.
San Francisco	20,558	$84,005 10	26,496	$100,425 59	Amt. bro't forward	51,708	$136,788 50	58,819	$164,735 44
S. F. Ferry	7,583	16,251 00	5,880	12,895 70	Page's	427	1,372 95	1,134	4,706 75
Tiburon	1,583	3,241 15	2,065	3,334 79	Kenilworth	....	....	....	....
Hilarita	20	78 55	50	111 30	Sebastopol	391	949 65	2,566	4,627 09
Reed's	227	801 55	399	1,595 55	Santa Rosa	18,242	25,426 35	9,925	18,189 45
San Clemente	71	128 55	84	105 55	Fulton	1,131	2,584 60	952	2,282 45
Green Brae	178	740 65	252	1,135 20	Mark West	85	245 35	123	102 45
San Rafael	3,049	6,145 60	6,219	12,966 33	Windsor	1,475	3,364 20	2,273	5,289 60
Miller's	1,560	984 95	2,420	2,743 10	Grant's	409	675 70	596	1,351 95
Ignacio	170	265 85	85	265 95	Healdsburg	5,162	17,766 35	6,085	16,816 42
Novato	1,341	2,967 15	1,848	5,573 30	Littons	1,557	3,592 75	2,407	5,341 40
Burdell's	165	223 05	79	125 10	Geyserville	1,744	5,999 35	2,424	7,874 35
Petaluma	10,515	17,269 50	12,586	23,213 73	Asti	1,415	4,274 25	1,771	4,942 15
Penn's Grove	1,238	1,277 20	34	115 45	Cloverdale	3,628	11,524 95	3,906	11,580 65
Goodwin's	3,420	2,408 65	322	128 80	Preston	36	90 25	174	576 90
Amt. car. forward	51,708	$136,788 50	58,819	$164,735 44	Amt. car. forward	87,410	$214,655 20	93,155	$248,417 05

TABLE M.—Continued.

STATIONS.	For Year Ending June 30, 1890.		For Year Ending June 30, 1891.		STATIONS.	For Year Ending June 30, 1890.		For Year Ending June 30, 1891.	
	TONS.	REVENUE.	TONS.	REVENUE.		TONS.	REVENUE.	TONS.	REVENUE.
Amt. bro't forward	87,410	$214,655 20	93,155	$248,417 05	Amt. bro't forward	124,199	$290,268 30	133,170	$329,383 72
Fountain	23	27 80	....	....	Reclamation ...	25	36 30	221	302 55
Hopland.....	1,366	4,208 45	1,814	6,416 00	Sears' Point	38	140 85	54	186 05
Largo	279	1,408 80	305	1,041 30	Schellville.......	107	265 10	106	198 05
El Robles....	200	659 70	346	1,003 30	Vineyard	1,207	1,994 40	1,381	2,390 92
Ukiah	3,656	17,780 05	4,158	16,572 20	Buena Vista....	225	565 70	330	483 60
Meacham's....	44	52 95	21	42 35	Sonoma	21,370	13,165 15	12,857	10,480 20
Carriger's.....	117	364 25	75	154 90	Verano..........	362	562 90	278	534 13
Trenton	461	865 25	1,228	2,558 40	Caliente...... .	4,884	2,863 40	2,466	1,682 70
Forestville....	1,111	2,448 45	1,519	2,933 25	Watriss	42	122 05	14	33 55
Green Valley..	701	1,310 70	977	1,581 65	Madrone	73	225 20	72	156 65
Korbels	5,092	7,381 95	4,587	8,975 96	Hill's..........	32	127 40	39	106 95
Guerneville....	20,383	33,594 65	21,916	34 158 66	Glen Ellen......	1,373	3,192 00	2,418	5,708 93
Hurlbert......	3,278	5,380 35	3,069	5,528 70	Echo............	6	39 90	24	81 05
Finley's......	78	129 75	....	....	McGill's.........	14	21 65	14	32 25
					Donahue & Ely's	5	12 30	61	89 50
Amt. car. forward	124,199	$290,268 30	133 170	$329 383 72					
Totals						153,962	$313.602 60	153,505	$351,850 80
Company's freight						40,317	15,467 97	38,967	10,983 77
Grand Totals..						194,279	$329,070 57	192,472	$362,834 57

TABLE N.

CLASSIFICATION OF FREIGHT FORWARDED

AND PERCENTAGE OF TONNAGE.

DESCRIPTION.	For Year ending June 30, 1890.			For Year ending June 30, 1891.		
	Tons.	Revenue.	Per Ct. of Tonnage.	Tons.	Revenue.	Per Ct. of Tonnage.
Lumber...... ...	12,049	$17,962 95	6.20	14,418	$ 22,107 94	7.49
Shingles	664	1,289 35	.34	932	1,843 45	.49
Redwood & bolts.	10,082	12,161 85	5.18	8,316	10,222 35	4.33
Posts............	486	428 65	.25	246	424 00	.13
Pickets....	599	1,295 90	.30	1,005	1,567 30	.52
Pine............	2,445	5,339 70	1.25	3,394	5,973 15	1.72
Peeled oak......	377	447 50	.19	854	1,571 50	.44
Rough oak......	2,595	5,895 05	1.33	2,954	4,695 00	1.54
Tan bark........	2,456	6,362 05	1.26	4,787	13,239 40	2.49
Live stock.......	3,515	7,499 41	1.82	2,970	5,408 75	1.55
Hay....	1,210	1,591 35	.62	1,970	2,491 55	1.03
Charcoal..	2,755	6,654 20	1.42	2,865	5,683 80	1.48
Rock....	33,790	24,136 02	17.44	14,850	11,650 46	7.72
Brick...........	3,240	2,927 00	1.66	5,597	6,976 90	2 91
Mill stuff....	1,620	4,026 81	.83	1,820	2,985 50	.95
Grain...........	3,296	4,939 20	1.69	4,224	5,282 80	2.19
Flour............	2,390	2,023 60	1.23	2,908	5,120 06	1.52
Wine....	11,627	26,724 75	5.98	12,735	31,024 67	6.62
Wool....	1,030	6,694 90	.53	767	4,754 25	.39
Hops	965	5,753 05	.49	766	4,971 17	.39
Fruit....	5,297	11,532 05	2.73	9,173	21,224 05	4.77
Miscellaneous...	51,474	157,917 26	26.49	55,954	182,632 75	29.08
Co's freight. .	40,317	15,467 97	20.77	38,967	10,983 77	20.25
Totals....	194,279	$329,070 57	100.00	192,472	$362,834 57	100.00

TABLE O.

CLASSIFICATION OF FREIGHT FORWARDED

AND PERCENTAGE OF REVENUE.

DESCRIPTION.	For Year ending June 30, 1890.			For Year ending June 30, 1891.		
	Tons.	Revenue.	Per ct. of Revenue.	Tons.	Revenue.	Per ct. of Revenue.
Lumber....	12,049	$ 17,962 95	5.45	14,418	$ 22,107 94	6.09
Shingles....	664	1,289 35	.39	932	1,843 45	.50
Redwood and bolts..	10,082	12,161 85	3.70	8,316	10,222 35	2.82
Posts..............	486	428 65	.13	246	424 00	.12
Pickets..........	599	1,295 90	.39	1,005	1,567 30	.43
Pine.......	2,445	5,339 70	1.62	3,394	5,973 15	1.64
Peeled oak..........	377	447 50	.13	854	1,571 50	.43
Rough oak..........	2,595	5,895 05	1.80	2,954	4,695 00	1.28
Tan bark....	2,456	6,362 05	1.99	4,787	13,239 40	3.65
Live stock....... ...	3,515	7,499 41	2.28	2,970	5,408 75	1.49
Hay...........	1,210	1,591 35	.48	1,970	2,491 55	.68
Charcoal....	2,755	6,654 20	2.02	2,865	5,683 80	1.57
Rock...........	33,790	24,136 02	7.33	14,850	11,650 46	3.22
Brick......	3,240	2,927 00	.88	5,597	6,976 90	1.93
Mill stuff.....	1,620	4,026 81	1.22	1,820	2,985 50	.82
Grain.........	3,296	4,939 20	1.50	4,224	5,282 80	1.45
Flour..............	2,390	2,023 60	.61	2,908	5,120 06	1.42
Wine.	11,627	26,724 75	8.12	12,735	31,024 67	8.55
Wool..........	1,030	6,694 90	2.03	767	4,754 25	1.32
Hops....	965	5,753 05	1.74	766	4,971 17	1.38
Fruit........	5,297	11,532 05	3.50	9,173	21,224 05	5.85
Miscellaneous.	51,474	157,917 26	47.99	55,954	182,632 75	50.33
Company's freight...	40,317	15,467 97	4.70	38,967	10,983 77	3.03
Totals..........	194,279	$329,070 57	100.00	192,472	$362,834 57	100.00

TABLE P.

SUMMARY OF RESULTS OF OPERATION.

	YEAR ENDING JUNE 30, 1890.	YEAR ENDING JUNE 30, 1891.
PASSENGER TRAFFIC:		
Number of passengers carried	686,623	804,148
Number of passengers carried one mile	18,410,535	19,835,773
Average number of miles each passenger carried	26.81	24.66
Number of passenger train miles	221,741	234,134
Passenger earnings	$380,454.86	$416,479.01
Average earning per passenger	$0.55	$0.51
Average earning per passenger per mile	cents, 2.06	cents, 2.09
Earnings of passenger trains (including passengers, mail, express, excess baggage, and news privilege)	$410,330.90	$456,186.75
Average earning per passenger train mile	$1.85	$1.95
Average earning per mile of road	$2,529.00	$2,811.62
FREIGHT TRAFFIC:		
Number of tons carried	194,279	192,472
Number of tons carried one mile	7,458,210	8,299,391
Average miles hauled	miles, 38,39	miles, 43.12
Number of freight train miles (freight and mixed)	145,554	121,279
Freight earnings	$329,070.57	$362,834.57
Average earning per ton	$1.69	$1.88
Average earning per ton per mile	cents, 4.41	cents, 4.37
Average earning per freight train mile	$2.26	$2.99
Average earning per mile of road	$2,028.17	$2,236.26
TOTAL EARNINGS:		
Earnings of passenger and freight trains	$739,401.47	$819,021.32
Average earning per passenger and freight train mile	$2.01	$2.34
Earnings from miscellaneous sources	$15,892.21	$13,626.22
Gross revenue (all sources)	$755,293.68	$832,647.54
Average gross earnings per mile of road	$4,655.12	$5,131.88
OPERATING EXPENSES:		
Operating expenses (excluding taxes) passenger	$278,489.60	$288,443.79
Operating expenses (excluding taxes) freight	$223,293.68	$229,408.63
Total operating expenses (excluding taxes)	$501,783.28	$517,852.42
Percentage of passenger expenses to passenger train earnings	67.87%	63.23%
Percentage of freight expenses to freight train earnings	67.85%	63.22%
Percentage of expenses (excluding taxes) to gross earnings	66.43%	62.20%
Expense per passenger per mile	cents, 1.51	cents, 1.45
Expense per ton per mile	cents, 2.99	cents, 2.76
Expense per passenger train mile	$1.25	$1.23
Expense per freight train mile	$1.53	$1.89
Expense per passenger and freight train mile	$1.37	$1.46
Expense per mile of road (excluding taxes)	$3,092.65	$3,191.70
NET EARNINGS:		
Net earnings per passenger per mile	cents, 0.55	cents, 0.64
Net earnings per ton per mile	cents, 1.42	cents, 1.61
Net earnings per passenger train mile	$0.60	$0.72
Net earnings per freight train mile	$0.73	$1.10
Net earnings per passenger and freight train mile	$0.64	$0.88
Net earnings per mile of road	$1,562.47	$1,940.18

TABLE Q.

EQUIPMENT AT JUNE 30, 1891.

	Equipment June 30, 1890.	Sold Etc. Since.	Added Since.	Equipment June 30, 1891.
LOCOMOTIVES:	18			18
	18			18
PASSENGER:				
Passenger coaches	41			41
Excursion cars	7			7
Baggage, mail and express cars	4			4
Palace cars	1			1
Passenger narrow-gauge cars	4	2		2
	57	2		55
FREIGHT:				
Cabooses	2			2
Box cars	103	1		102
Stock cars	13			13
Flat cars	275	3		272
	393	4		389
MISCELLANEOUS:				
Dump cars	13			13
Transfer cars	1			1
Push cars	28			28
Hand cars	29		4	33
Section dump-cars	3			3
Velocipede cars	1			1
Push cars, narrow-gauge	1	1		
Hand cars, narrow-gauge	2	2		
	78	3	4	79

NOTE—Reserve fund created for Box Car No. 40, and Flat Cars No. 15, 49, 55, 63, 109, and 235 destroyed, or taken out of service.

TABLE R.

FLOATING EQUIPMENT AT JUNE 30, 1891.

STEAMER "UKIAH."—Double-Ender.

Lower deck 291 feet; breadth 42 feet; depth 15 feet.

Upper promenade deck.

Gross tonnage 2,564.42.

Net tonnage 2,018.77.

One engine—Condensing—65 inch cylinder; 12 foot stroke.

STEAMER "TIBURON."—Double-Ender.

Lower deck 220 feet; breadth 54 feet 6 inches; depth 13 feet 5 inches.

Cabin deck.

Gross tonnage 1,257.14.

Net tonnage 883.42.

One engine—Condensing—50 inch cylinder; 11 foot stroke.

STEAMER "DONAHUE."—Billet head, Elliptic stern.

Lower deck 219 feet; breadth 32 feet 4 inches; depth 9 feet 7 inches.

Cabin deck.

Gross tonnage 730.86.

Net tonnage 592.30.

One engine—Condensing—48 inch cylinder; 11 foot stroke.

TABLE S.

LENGTH OF ROAD.

IN COUNTIES.

COUNTY.	For Year ending June 30, '90		For Year ending June 30, '91	
	Main Line.	Sidings.	Main Line.	Sidings.
Marin	29.50	7.36	29.50	7.42
Sonoma	106.95	14.55	106.95	15.50
Mendocino	25.80	1.57	25.80	1.61
Miles	162.25	23.48	162.25	24.53

OPERATED.	1890. MILES.	1890. MILES.
Main Line:		
Point Tiburon to Ukiah	106.00	106.00
Branches:		
Donahue, to junction with main line	5.76	5.76
Fulton to Guerneville	17.61	17.61
Santa Rosa to Sebastopol	6.25	6.25
Ignacio to Glen Ellen	26.63	26.63
Totals	162.25	162.25
Ferry:		
San Francisco to Tiburon	6.50	6.50
Totals railroad and ferry	168.75	168.75

STATEMENT OF TRAIN MILEAGE.

	For Year ending June 30, 1890.			For Year ending June 30, 1891.		
Passenger trains		221,741			234,134	
Mixed trains	76,371			47,763		
Freight trains	69,183			73,516		
		145,554			121,279	
			367,295			355,413
Switching			14,705			11,665
Construction			23,533			22,352
Total			405,533			389,430

TABLE T.

MOVEMENT OF FREIGHT TRAINS AND CARS.

	For Year ending June 30, 1890.			For Year ending June 30, 1891.		
	NORTH BOUND.	SOUTH BOUND.	TOTAL.	NORTH BOUND.	SOUTH BOUND.	TOTAL.
Engine mileage (Ft. and mix.)..	....	....	145,554	....	....	121,279
CAR MILEAGE:						
Loaded.......	433,556	633,691	1.067,247	609,130	701,247	1,310,377
Empty........	272,409	76,198	348,607	251,368	98,475	349,843
Totals -	705,965	709,889	1,415,854	860,498	799,722	1,660,220
PERCENTAGE OF CAR MILEAGE:						
Loaded......	61.41	89.27	75 38	70.79	87.69	78.93
Empty........	38.59	10 73	24.62	29.21	12.31	21.07
Totals, -	100.00	100.00	100.00	100.00	100.00	100 00

TABLE U.

MATERIAL AND SUPPLIES ON HAND.

DESCRIPTION.	Year Ending June 30, 1890.		Year Ending June 30, 1891.	
	QUANTITY.	VALUE.	QUANTITY.	VALUE.
Coal	Tons 500	$3,410 96	Tons 1,790	$12,516 31
Steel rails	Tons 171	7,226 00	Tons 69	2,320 00
Iron rails	Tons 155	4,333 00	Tons 163	3,651 20
Rail fastenings	Lbs 27,666	547 07	Lbs 9,104	166 08
Ties	5,428	1,759 29	6,219	2,122 34
Spikes	63,400	1,705 46	Lbs 19,400	533 50
Lumber	Ft., B. M. 100,865	1,656 06	Ft. B. M. 92,191	1,319 50
Iron and steel	Lbs 44,230	1,182 89	Lbs 20,819	787 95
Copper	Lbs. 130	32 90	Lbs 108	30 24
Tin		48 82		13 89
Oil and tallow		242 75		203 97
Waste	Lbs 20	2 00	Lbs 155	19 38
Paints and varnish		256 06		500 98
Glass		115 17		167 73
Bolts and nuts	Lbs 310	18 95	Lbs 1,029	51 45
Iron castings	Lbs 47,182	1,660 44	Lbs 45.619	1,756 33
Brass	Lbs. 6,881	1,156 95	Lbs 7,033	1,265 94
Axles	63	237 00	55	165 00
Wheels	235	2,508 00	179	1,794 75
Tires	24	1,200 00	22	1,010 00
Steel springs	Lbs 9,587	462 31	Lbs 2,771	263 25
Nails	Lbs 3,930	172 03	Lbs 4,175	174 66
Rubber goods		33 12		28 14
Stationery		1,304 53		180 20
Gen. merchandise		4,654 31		4,930 91
Wood	Cords 475	1,762 16	Cords 1798½	6,345 84
Total		$37,688 23		$42,319 55

IN CHARGE OF THE FOLLOWING DEPARTMENT.	1890.	1891.
Stores department	$20,132 38	$18,369 28
Maintenance of way department	11,078 20	4,907 92
Fuel stock department	5,173 12	18,862 15
Stationery department	1,304 53	180 20
Total	$37,688 23	$42,319 55

TABLE V.

Report of Persons Employed and Amount Paid

For years ending June 30, 1890 *and* 1891.

OCCUPATION.	Year ending June 30, 1890		Year ending June 30, 1891	
	NO. MEN	AMOUNT.	NO. MEN	AMOUNT.
CONDUCTING TRANSPORTATION.				
Agents and clerks	30	$23,030 70	34	$24,923 30
Dispatchers and operators	1	880 00	1	1,020 00
Advertising and soliciting agents	2	1,755 00	2	2,510 00
Conductors	10	11,080 65	10	11,419 00
Brakemen and baggagemen	14	10,398 25	14	10,471 15
Laborers	9	5,885 90	8	5,265 30
Watchmen	1	732 00	1	730 00
Superintendence	1	2,400 00	1	3,000 00
Mail carriers	3	322 00	4	422 25
Wood sawing gang	4	2,608 55	6	3,293 50
STEAMERS:				
Captains	2	3,600 00	2	3,600 00
Engineers	2	3,600 00	3	5,400 00
Crew	30	23,453 22	32	25,355 89
	109	$89,746 27	118	$97,410 39
MOTIVE POWER AND MAINTENANCE OF CARS.				
Engineers	12	$12,724 95	12	$13,446 35
Firemen	12	7,492 75	12	7,631 55
Hostlers and wipers	6	3,158 21	6	3,357 75
Foremen	2	2,523 00	3	3 408 90
Machinists and helpers	11	8,376 39	9	6,960 70
Carpenters, car repairers and helpers	12	9,761 10	11	9,363 75
Painters and helpers	7	5,709 65	6	5,175 55
Blacksmiths and helpers	5	4,575 45	4	3,627 90
Other mechanics	8	6,630 85	7	5,613 85
Watchmen	1	732 00	1	730 00
Laborers	7	3,653 70	6	3,441 00
Master Mechanic and staff	1	1,866 64	1	1,999 94
	84	$67,204 69	78	$64,757 24
MAINTENANCE OF WAY.				
BRIDGES AND BUILDINGS:				
General foremen	1	$1,320 00	1	$1,298 75
Foremen	3	3,568 95	4	4,607 15
Carpenters and pile drivers	15	13,319 50	20	16,716 00
Painters	....	....	1	419 00
Engineer pile driver	1	879 50	2	1,733 50
TRACK AND ROADWAY:				
Roadmasters	1	1,440 00	2	2,100 00
Foremen	25	18,583 50	27	19,998 80
Laborers	112	62,567 90	101	55,215 15
Construction train crew	3	1,913 55	2	1,537 80
Steam shovel crew	2	1,312 25	2	1,329 25
Engineers and assistants	2	5,225 00	2	4,370 00
Field engineers	2	1,312 70	1	1,033 80
Sebastopol extension	8	4,578 95	....	....
Guerneville extension	....	....	3	1,471 90
Cloverdale and Ukiah extension	13	7,619 12	....	....
El Campo picnic grounds	....	....	1	372 85
	188	$123,640 92	169	$112,203 95
GENERAL EXPENSES.				
General officers	5	$23,013 22	5	$24,449 99
Clerks	9	8,291 00	12	11,955 00
Janitor	1	600 00	1	700 00
Attorneys	2	5,531 66	2	7,483 33
Storekeeper and assistant	2	1,595 00	2	2,000 00
Special agent	....	....	1	1,250 00
	19	$39,030 88	23	$47,838 32
Grand Total	400	$319,622 76	388	$322,209 90

San Francisco and North Pacific Railway Co.

PERFORMANCE OF ENGINES FOR THE YEAR ENDING JUNE 30, 1891.

TABLE W.

Engine No.	Name of Builder.	Size of Engines.				Mileage of Engines.						Cost of Oil, Grease and Waste.					Cost of Repairs.			Cost of Fuel.			Grand Total.	Miles Run per Pint of Oil.	Miles Run per Ton Coal.	Cost per Mile Run in Cents.				Remarks.
		Size of Cylinder in Inches.	Stroke.	Drivers. No.	Drivers. Dia. in Inch's	Pass.	Fr't.	Mixed.	Swchg.	Const.	Total.	Lub. Oil. Gals.	Waste. Lbs.	Cyl. Grease Lbs.	H. L. Oil. Gals.	Total Cost.	Labor.	Material.	Total.	Tons of Coal.	Cords of Wood	Total Cost.				For Oil, Grease and Waste.	For Repairs	For Fuel.	Total Cost per Mile Run.	
1	Norris L. W.	13	22	4	58	709	8	4,274	....	5,212	10,203	87	105	131	23	$ 56 94	$ 136 77	$ 53 01	$189 78	1½	301½	1,123 75	$1,370 47	11.59	67.01	.56	1.86	11.01	13.43	....
2	Booth L. W.	14	22	4	60	1,503	96	9,008	6	1,329	11,942	73	73½	244	9	56 06	228 41	81 79	310 20	2¼	394	1,443 75	1,810 01	18.20	59.19	.47	2.59	12.10	15.16	....
3	Booth L. W.	14	22	4	60	2,408	93	442	348	9,292	12,583	87½	81	239	15½	60 14	119 63	31 36	150 99	37½	258½	1,248 50	1,459 63	15.27	75.46	.48	1.20	9.92	11.60	....
4	Booth L. W.	14	22	4	60	10,758	530	530	4,435	28	16,281	114	167½	463	21	99 67	282 31	120 07	402 38	134¾	375½	2,450 25	2,952 30	15.07	50.48	.61	2.47	15.05	18.13	New flues.
5	Booth L. W.	14	22	4	60	11,721	3,391	4,664	792	54	20,622	142½	189	508	26½	113 68	345 78	119 92	465 70	33½	525¼	2,247 68	2,827 06	15.25	69.64	.55	2.26	10.90	13.71	General repairs month of February.
6	Grant L. W.	16	24	4	60	14,846	9,165	......	398	247	24,656	193	303	705	42¾	161 34	604 44	388 58	993 02	112¼	503½	2,719 85	3,874 21	13.07	67.74	.65	4.03	11.03	15.71	....
7	Grant L. W.	16	24	4	60	11,490	2,189	3,682	435	682	18,478	134¼	163½	356	21	98 30	1,147 13	628 78	1,775 91	89½	420¼	2,245 56	4,119 77	14.87	61.67	.53	9.61	12.15	22.29	....
8	Baldwin L. W.	15	24	4	60	29,052	35	2,288	1,317	......	32,692	176	225	442	28½	128 49	813 02	358 71	1,171 73	207¼	747¼	4,397 19	5,697 41	19.98	56.28	.39	3 59	13.45	17.43	Wrecked month of March.
9	Grant L. W.	16	24	4	60	43,413	......	......	......	......	43,413	178½	310	300½	29	122 17	362 65	179 93	542 58	185½	781¾	5,116 31	5,781 06	26.15	75.32	.28	1.25	11.79	13.32	General repairs month of July.
10	Grant L. W.	16	24	4	60	25,463	2,378	4,932	618	684	34,075	212	339	468½	33	142 01	272 47	187 51	459 98	157½	804	4,213 19	4,815 18	17.38	60.90	.42	1.35	12.36	14.13	....
11	Booth L. W.	14	22	4	60	2,277	310	13,065	12	415	16,079	58¾	98	522	15¾	79 92	131 13	114 56	245 69	....	573¾	2,158 31	2,483 92	26.98	56.05	.50	1.53	13.42	15.45	....
12	Rogers L. W.	18	24	4	60	4,169	6,050	496	568	3,016	14,299	96¼	170½	259	28	77 80	595 00	199 77	794 77	156¾	524½	3,158 13	4,030 70	14.38	34.13	.54	5.56	22.09	28.19	General repairs month of June.
13	Rogers L. W.	18	24	4	60	3,391	9,015	402	377	915	14,100	144¼	190½	541	54	117 21	1,068 56	272 84	1,341 40	242	523¼	3,782 44	5,241 05	8.89	28.00	.83	9.51	26.83	37.17	General repairs month of August.
14	Grant L. W.	16	24	4	60	13,140	4,370	....	585	396	18,491	146¾	129	286	18¼	90 42	696 46	252 56	949 02	258½	391¼	2,753 37	3,792 81	14.01	40.72	.49	5.13	14.89	20.51	General repairs month of April.
15	Grant L. W.	18	24	6	54	81	11,042	......	1,672	14	12,809	183½	293½	752½	66½	172 49	841 79	253 97	1,095 76	627¾	30¾	5,137 26	6,405 51	6.40	19.92	1.35	8.55	40.11	50.01	General repairs month of January.
16	Rogers L. W.	17	24	4	60	17,812	....	....	102	......	17,914	133½	136½	108	4¾	72 05	208 61	70 52	279 13	368	28½	3,046 03	3,397 21	16.19	46.86	.40	1.56	17.00	18.96	....
17	Rogers L. W.	17	24	4	60	41,858	....	....	....	68	41,926	218⅞	201	124	6½	113 48	292 12	165 73	457 85	866	68½	7,172 87	7,744 20	23.25	46.57	.27	1.09	17 11	18.47	....
18	Rogers L. W.	16	24	6	54	43	24,844	3,980	....	....	28,867	312	254	805½	39	208 12	302 78	202 88	505 66	33½	1,299½	5,075 63	5,789 41	10.28	42.25	.72	1.75	17.59	20.06	....
						234,134	73,516	47,763	11,665	22,352	389,430	2,691⅝	3,429½	7,255	482	$1,970 29	$8,449 06	$3,682 49	$12,131 55	3,514	8,551½	$59,490 07	$73,591 91	15 33	49.99	.51	3.12	15.27	18.90	

MILES OPERATED.

Main line of road Point Tiburon, Cal., to Ukiah, Cal.		106.00 miles.
Donahue to junction with main line	5.76	
Fulton, Cal., to Guerneville, Cal.	17.61	
Ignacio to Glen Ellen	26.63	
Santa Rosa to Sebastopol	6.25	56.25 miles.
Total length of railroad operated		162.25 "

Wages of Engineers	$14,480 05
" " Firemen	8,139 65
Total	$22,619 70
Wages of Round-housemen and water supply	$ 8,598 73

Average cost of Coal, per ton	$8.00
" " Wood, per cord	3.67
" " Oil, per gallon	.29 32
" " Waste, per pound	.10.12
" " Cylinder Grease, per pound	.09

Average cost per mile run, as above	18.90 cts.
" " " " for Enginemen	5.81 "
" " " " " Round-housemen and water supply	2.20 "
Total average cost per mile run	26.91 "

MAINTENANCE OF CARS.

Service.	Repairs. Labor.	Repairs. Material	Oil and Waste.	Sup'ce and General Expense.	Total.	Mileage. Loaded.	Mileage. Empty.	Average Cost per Mile Run in Cents.
Passenger	$5,005 91	$2482 71	$380 84	$ 659 97	$8,529 43	951,414	....	.90
Freight	5,383 23	3072 74	241 14	1299 97	9,997 08	1,311,023	351,577	.66
Total	$10,389 14	$5555 45	$621 98	$1959 94	$18,526 51			

PERFORMANCE OF STEAMERS AND COST PER MILE RUN.

Steamer.	Tonnage.	No., Kind and Size of Engines.				Number of Miles Run.			Cost of Oil and Waste.								Cost of Repairs.			Expense.			Cost of Fuel.		Water Supply.	Grand Total Cost.	Miles Run to One Pint of Oil.	Cost per Mile Run in Cents.					
									Engineer's Department.			Captain's Department.																					
		No.	Kind.	Cylinder	Stroke.	Passenger Service.	Freight Service.	Total.	Lub. Oil. Gals.	Waste. Lbs.	Cost.	Ms. Oil. Gals.	Sig. Oil. Gals.	Waste. Lbs.	Cost.	Total Cost.	Labor.	Material.	Total.	Labor.	Material.	Total.	Lbs. of Coal.	Cost.				For Oil and Waste	For Repairs.	For Expense.	For Fuel.	For Water	Total Cost.
Bay City	1283	1	Condensing	50 in.	12 ft.	26	....	26	1	2	$ 62	....	....	....	....	$ 62	....	....	....	....	$ 80 00	$ 80 00	20,160	$ 72 00	....	$ 152 62	3.25	2.39	... ..	367.69	276.93	......	587.01
Tiburon	1257	1	Condensing	50 "	11 "	16,328	420	16,748	490	190	302 27	195	45	90	$86 14	388 41	$3,904 82	$6,652 88	$10,557 70	$543 41	353 53	896 94	4,955,067	13,097 64	$ 683 70	25,624 39	2.87	2.32	63.04	5.35	78.21	4.08	153.00
Pride of the River	619	1	Non Condensing	20 "	7 "	26	345	371	5	5	2 40	10	5	5	5 10	7 50	....	....	....	....	1,254 44	1,254 44	780,550	483 25	21 00	1,766 19	2.32	2.02	......	338.13	130.25	5 66	476.06
Donahue	730	1	Condensing	48 "	11 "	2,762	3,810	6,572	195	105	123 13	130	20½	30½	48 31	171 44	483 01	189 58	672 59	477 13	318 43	795 56	2,645,800	6,142 58	749 00	8,531 17	4.45	2.61	10.23	12.11	93.46	11.40	129.81
Ukiah	2564	1	Condensing	65 "	12 "	14,830	....	14,830	508	215	329 14	105	30	20	39 15	368 29	182 83	340 01	522 84	451 09	127 85	578 94	5,154,020	14,508 53	526 30	16,504 90	2.88	2.48	3 53	3 90	97.83	3.55	111.29
						33,972	4,575	38.547	1,199	517	$757 56	440	100½	145½	$178 70	$936 26	$4,570 66	$7,182 47	$11,753 13	$1,471 63	$2,134 25	$3,605 88	13,555,597	$34,304 00	$1,980 00	$52,579 27	2.77	2.43	30.49	9.35	88.99	5.14	136.40

MILES OPERATED.

San Francisco to Point Tiburon—Actual mileage.......6½ miles.

" " " Mileage allowed.....7½ "

Note.—"Bay City" and "Pride of the River" chartered steamers.

"Tiburon" received new shaft and general repairs.

Steamer Bay City—Total cost, as above	$ 152 62
" " Wages of Captain and crew	34 39
Total	$ 187 01
Steamer Tiburon—Total cost, as above	$25,624 39
" " Wages of Captain and crew	8,964 29
Total	$34,588 68

Steamer Pride of the River—Total cost, as above	$ 1,766 19
" " " " Wages of Capt. and crew	1,174 75
Total	$2,940 94
Steamer Donahue—Total cost, as above	$ 8,531 17
" " Wages of Captain and crew	14,327 14
Total	$22,858 31
Steamer Ukiah—Total cost, as above	$16,504 90
" " Wages of Captain and crew	6,768 23
Total	$23,273 13

Steamer Bay City—Total cost	$ 187 01
" Tiburon "	34,588 68
" Pride of the River—Total cost	2,940 94
" Donahue "	22,858 31
" Ukiah "	23,273 13
Grand total cost of steamboat service during year	$83,848 07

Total average cost per mile run, as above	136.40 cts.
Average cost of Captain and crew	81.12 "
Grand total average cost per mile run	217.52 cts.

TABLE X.

Statement of Expenditure made under Agreement dated October 2, 1888, and supplemented by an Agreement dated July 1, 1889, between JAMES M. DONAHUE *and* J. & W. SELIGMAN & CO. *and* LADENBURG, THALMANN & CO., *and ratified by* SAN FRANCISCO & NORTH PACIFIC RAILWAY COMPANY *on July 16, 1889.*

AMOUNT AGREED TO BE EXPENDED BY JAMES M. DONAHUE.		EXPENDED TO JUNE 30, 1891.	
	Sonoma Valley R. R. (widening gauge):		
	Engineering expenses	$710.30	
	Bridges and trestles	8,783.08	
	Broadening gauge (labor)	1,701.24	
	Iron rails, 1862½ tons, and labor	61,238.46	
	Fastenings	5,196.23	
	Cross-ties, 36,109, and labor	15,381.58	
	Track tools	255.16	
	Switches and Frogs	824.18	
	Right of way, etc	265.15	
	Grading	1,231.17	
	Surfacing	1,325.56	
	Fencing and cattle-guards	1,007.11	
	Turntables, Glen Ellen and Ignacio	1,349.18	
	Ballasting	1,250.99	
	Superintendence	330.50	
	Station-houses, platforms, etc	1,384.10	
	Interest	6,744.92	
	Sidings, — Glen Ellen, Sonoma, Hills, Buena Vista, Roses, Schellville, Madrone, and Chauvet	3,118.70	
$70,000.00			$112,097.61
	Cloverdale & Ukiah R. R. (equipping, etc.):		
	New depots	$4,952.14	
	New fencing	10,967.93	
	New engines	27,272.27	
	New flat cars	12,779.74	
	New box cars	12,312.17	
$58,500.00			$68,284.25
	New Steamer (construction of):		
	Engineering expenses	887.81	
	Hull of steamer (lumber, labor, etc.)	12,214.03	
	Hull of steamer (paid Dickie Bros., contractors)	48,250.00	
	Machinery and boilers (paid Hinckley, Spiers & Hayes, contractors)	81,718.75	
	Superintendence, — wages	3,524.00	
	Insurance	188.49	
	Joinery work	20,510.60	
	Painting	5,769.06	
	Equipment	4,076.63	
	Steering gear	1,915.50	
	Track, cost of rails and fastenings	1,043.31	
	Life-boats	550.00	
	Watching, plumbing, glazing, heating, dockage, stairs, fuel, etc	3,408.77	
$115,173.32			$184,056.95
			$364,438.81
	Less amount derived from sale of old material, Sonoma Valley Railroad	$65,600.01	
	Less amount thereof paid executors of estate of James M. Donahue, deceased	32,138.28	
			33,461.73
$243,673.32	Totals		$330,977.08

Total amount expended as above	$330,977.08	
Amount agreed to be expended thereon by James M. Donahue, as above	243,673.32	
Expended in excess, and now transferred to construction account, page 40, table C, exhibit E		$87,303.76

TABLE Y.

DESCRIPTION OF ROAD.

Dates upon which Road was opened for public use.

From Donahue	to Santa Rosa.	January 1, 1870.
From Santa Rosa	to Windsor	March 1,1871.
From Windsor	to Grants	April 10, 1871.
From Grants	to Healdsburg	July 1, 1871.
From Healdsburg	to Cloverdale	April 15, 1872.
From Fulton,	to Guerneville	May 29, 1876.
From Petaluma	to San Rafael	June 2, 1879.
From Sonoma Landing	to Sonoma	August 23, 1880.
From Sonoma	to Glen Ellen	August 15, 1882.
From San Rafael	to Tiburon	May 1, 1884.
From Ignacio	to Sears Point	June 1, 1888.
From Cloverdale	to Ukiah	May 1, 1889.
From Santa Rosa	to Sebastopol	February 17, 1890.

All of the above-mentioned road is standard gauge.

Ignacio to Glen Ellen, (old Sonoma Valley R. R.) narrow gauge, was changed to standard gauge April 9, 1890.

TABLE Z.

CHARACTERISTICS OF ROAD.

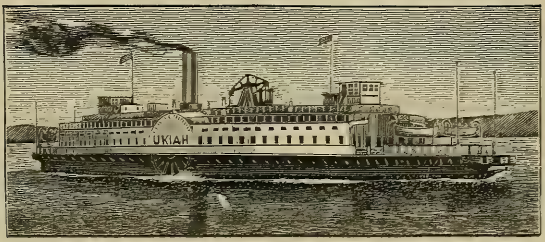
MAIN LINE AND BRANCHES.			ALIGNMENT.			PROFILE.						
							ASCENDING GRADES.			DESCENDING GRADES.		
FROM	TO	Length.	Number of curves.	Aggregate length of curved lines.	Length of straight track.	Length of level track.	Number.	Sum of ascents.	Aggregate length of ascending grades.	Number.	Sum of descents.	Aggregate length of descend'g grades.
MAIN LINE:												
Tiburon	Ukiah	106 00	188	25.34	80.66	29.76	44	1176.3	48 89	35	572.3	27.35
BRANCHES:												
Donahue........	Junction with main line .	5.76	5	1.04	4.72	2.64	7	20.5	1.48	5	19.5	1.64
Fulton..........	Guerneville. .... 15.27 Not known. . 2.34	17.61	53	7.24	8.03	6.46	11	48.5	2.70	11	128.5	6.11
Santa Rosa.....	Sebastopol.............	6.25	6	0.92	5.33	1.36	1	3.0	0.15	11	90.0	4.74
Ignacio.........	Glen Ellen	26.63	46	5.21	21.42	11.55	15	292.6	11.31	14	81.6	3.77
	Total length.	162.25										

BRIDGES:
Iron........... 2
Wooden 9
Combination ... 2
Total......13, aggregate length, 1848 $\frac{2}{10}$ feet.

TRESTLES:
Aggregate length....36,989 $\frac{6}{10}$ feet.

TUNNELS:............. 9
Maximum length....1851 feet.
Minimum length.... 248 "
Aggregate length....8985 "

GAUGE OF TRACK:
4ft. 8½ in.


UKIAH

ARGUMENT

OF THE

San Francisco and North Pacific Railway Co.

(DONAHUE LINE)

AGAINST THE ADOPTION

OF

Senate Constitutional Amendment No. 8,

INTRODUCED BY SENATOR GESFORD,

AND

Assembly Constitutional Amendment No 14,

INTRODUCED BY ASSEMBLYMAN GODCHAUX.

JANUARY 11, 1893.

Resolutions Relating to a Reduction of Railroad Freights and Fares of the Railroads of the State of California.

RESPECTFULLY SUBMITTED

TO THE

MEMBERS OF THE THIRTIETH SESSION

OF THE

CALIFORNIA LEGISLATURE.

CALIFORNIA STATE LIBRARY

TO THE MEMBERS

OF THE

CALIFORNIA LEGISLATURE:

Feeling that the proposed measure relating to the "Reduction of Freights and Fares" is of such very great importance to the future of the people of this State, and its development to a generous prosperity by future railroad construction, if not suppressed by a mistaken act of judgment, I take the liberty of presenting to you our argument why our railroad, not alone for our own sake, but also for the future prosperity of this great commonwealth, should not be hindered in its onward march by the enactment of the proposed bill.

Very respectfully submitted,

J. F. BURGIN,

President.

ADDRESS

TO THE SENATORIAL COMMITTEE, OF CONSTITUTIONAL AMENDMENT No. 14,

SACRAMENTO, CAL.

By Thos. Mellersh.

GENTLEMEN : In the open session of the California Senate, bills are introduced right and left on all subjects. Some are inspired by good motives, some inspired by selfish motives, and many from mistaken and ill-considered ideas.

Little time can be given to the discussion of the subject there, but the people of the State of California, as a body, cannot take evidence and decide these questions ; the Senate is expected to do this in their sphere. The Senate here stands between the temper of certain classes on the one hand and the property right of her citizens and corporations on the other ; and the quintessence of this responsibility is put upon you gentlemen of this committee as far as the railroad legislation is concerned.

On behalf of the San Francisco and North Pacific Railway Company, better known as the "Donahue Line," I wish to claim only a few minutes of your time to lay before you certain facts and certain evidences which, independent of all public clamor, must bear their legitimate weight when you come to conclude the open controversies this proposed bill has brought up.

In the first place, I represent a railroad of a total mileage of 165 miles. It runs from Point Tiburon, in Marin County, to Ukiah, in Mendocino County, and by branches to other points, and is a standard gauge railroad. This railroad would be severely affected by the proposed bill. The North Pacific Coast Railroad, with a mileage of eighty-seven miles, will be similarly affected; so will the Eureka and Eel River Railroad of thirty miles, and other railroads.

The public agitation which has been waged against the Southern Pacific Company in this State entirely ignored all consideration of these small railroads, pro or con.

It aimed its political javelin at the Southern Pacific Company with its grand aggregate total mileage, which is greater than the mileage of all these smaller railroads put together.

Now a law designed for a large number of small roads operated under one system, such as the Southern Pacific Company, cannot possibly be justly applied to the short distance roads. A bill that would regulate the large road would injuriously discriminate against the short roads, and a bill that would discriminate against the large road would annihilate and close up the short roads altogether.

I will now state a few facts to show this from a strictly business standpoint. I do not propose to plead poverty on behalf of the Donahue properties, but simply to compare the result of our present operations with what the result would be in case we operated our road under the present proposed bill.

The building of our road cost $7,090,059; its bonded indebtedness is $4,188,000. The necessities of the case compel us to pay interest each year on our mortgage in the sum of about $230,000. All this, with payments to our sinking fund, must come from our net profits. If we did not pay it out of our net profits we would have to close up the railroad altogether.

If our company should be reduced immediately to an established rate of three cents per mile in passenger, and to a freight rate as established in the schedule, what would the consequence be to us?

Mr. Leeds has stated that this reduction would affect the Southern Pacific Company to the extent of 25 per cent of their gross earnings. I assure you it will affect our company in a reduction of fifty per cent. It is a well-known fact that the comparative expenses of a small railroad are greater than those of a larger one over a corresponding distance. But, as Mr. Leeds has stated, that a 25 to 30 per cent reduction on the gross earnings of the Southern Pacific Company would be the result if this bill should become a law. Apply *this reduction* to our company and *what would be the result?*

Under the favorable auspices of the past, our road's earning for the last fiscal year shows a surplus of $106,007, after paying interest and betterments. If the road had been run under the regulations of the proposed bill, the same road, with the same economy and the same prosperity, would have run behind that year $130,126.70, and would have plunged the stockholders in debt to that extent. If I may use an old expression, "figures do not lie."

For the fiscal year ending June 30, 1892, our company's gross earnings were	$886,471.00
Less Mr. Leed's 25 per cent reduction	221,617.75
Making our gross earnings only	$664,852.25
Now our operating expenses and interest amount to	794,978.92
Making us run behind in one year alone	$130,126.70

Would you, gentlemen, as business men, like to make an investment in the stock of our road if you were compelled to run it on a basis of three cents a mile, and with the proposed freight tariff, knowing that no matter how the traffic was kept up, and no matter how smoothly things ran, your final balance sheet, which formerly showed a small profit, would then alarm you with a great annual loss?

Now, as far as the people of the State of California, represented in the Senate and in your committee are concerned, *they do not ask you to regulate the freight and fares of the Donahue road. The people do not complain of our rates; the people do not want our rates cut; the people do not want this proposed bill, as far as our road is concerned.*

Why, even the shippers on our line of road *are not complaining*, nor will you hear from our passenger traffic; and what is the reason of this? Simply because the people in the districts our road penetrates *want our train service;* not only that, they want more; they come to us from the north, from the northeast and from the northwest, and beg us to extend our road and come to their relief. They all realize that we are not able to reduce our rates and live. They pay our rates cheerfully and willingly. They would rather do that than to suffer a reduction of train service and a partial loss of the facilities of transportation, which, of course, would be the result of the passage of this bill.

In these days of anti-railroad agitation, it may seem strange to you that the people are thoroughly satisfied with our rates. I may as well confide in you a portion of the secret history of the road. We have had only two complaints filed against us with the Railroad Commissioners during the last eight or nine years of the road's operation; the charges were dismissed. It was found that the same individual had filed both charges, and it was further found that he had only shipped during the whole period one or two tons of freight, and he, himself, had only traveled over the road twice, and on one of those occasions he traveled on a free pass.

You, gentlemen, have already heard the opinion of Mr. Leeds on the subject. I cannot call it testimony, for he knows no facts; he simply gives his opinion; it is entitled to no greater weight than the opinion of any of you gentlemen, in the absence of facts to support it; some of his assertions are not universally admitted, for instance, in the case of maintenance. I do not agree with Mr. Leeds' assertion, that the cost is less in this State than in the State Mr. Leeds uses as an example for establishing the rates of fare and freight which you have before you in the printed bill.

In this State much greater are the hire of labor, the cost of rails, the cost of cars, the cost of locomotives, the cost of fixtures and greater than all, the cost of coal. The cost of this commodity in particular to us, has been on an average $7.25 per ton (placed upon our locomotive tenders), and in some years has run as high as $14, according to the condition of the coal market, reaching this figure in 1886. The cost to the Eastern roads being from 75 cents to $1.50 per ton.

Mr. Leeds has stated in answer to a question from your Honorable Committee that the effect of the reduction of these rates upon the independent roads would be an increase in travel. Mr. Leeds, in his answer, did not state his reason for this increase of business to the roads, except the reduction of rates. I would like to call the committee's attention to the fact that it took eighteen years for the Illinois Central, the Pennsylvania Central and the Lake Shore and Michigan Southern to come down from an average three-cent to an average two-cent rate per mile, with a population ten times as great as that of this State surrounding them.

Let us compare the population of the State of California, also that of the counties through which we run, with the several Eastern States which operate their lines upon the passenger rates and freight tariff like unto the one which Mr. Leeds has brought forward to be a basis for the operation of the roads in this State. Below I give you a table taken from the *Statistician* of 1892:

	Sq. Mls.	Inhab'tnts.	Population Per Sq. Ml.
Marin County	590	13,072	......
Mendocino County	3,694	17,612	......
Sonoma County	1,548	32,721	......
Lake County	1,125	7,101	......
	6,957	70,506	10
California,	158,360	1,208,130	8
Connecticut,	4,990	746,258	150
Illinois,	56,650	3,826,351	65
Indiana,	36,350	2,192,404	65
Massachusetts,	8,315	2,238,943	250
New York,	49,170	5,997,853	120
Pennsylvania,	45,215	5,258,014	115
Ohio,	41,060	3,672,316	90

One glance at these figures will show you why roads can operate with passenger rates in the States enumerated above, with the exception of this State, at a two-cent rate and even less.

It is my opinion that if this bill should pass and become a law, this State instead of progressing would retrograde. It is the ambition of the people of the State of California to have additional railroad communications with the East. Do you think that in the face of adverse legislation, capitalists will expend their money when they see that they will not get a fair return of interest for their investments, but, instead, that the chances are greatly that it will be a losing proposition? Mr. Leeds has said before you that people sometimes made bad investments.

The people of Humboldt County have been in a manner isolated from the balance of this State; the only approach to their county is by water over one of the most dangerous bars on the coast, or by stage line overland for a distance of 150 miles. They have been clamoring for a railroad communication. It will take several millions of dollars to make this desired extension from the terminus of our road. This county has only a population of 25,000 people. Do you think, gentlemen, that a railroad could be built into this new county and be operated upon a passenger rate of two cents per mile or even three or four cents? Do you think that this railroad could be operated upon a freight basis such as has been brought forward by Mr. Leeds, and pay the interest upon the investment?

It can be conclusively shown you that under skillful and fostering care the S. F. & N. P. Railway (the Donahue railroads), have penetrated the fertile valleys of Marin, of Sonoma and of Mendocino, and, if legislation does not kill railroad enterprise in these counties by mistaken or hurriedly considered legislation, these railroads will pierce the neglected forests and valleys of upper Mendocino and Humboldt, but I assure you that they will never get there on a two-cents-a-mile basis or on the proposed freight tariff.

I think, gentlemen, that, as far as our road is concerned, I can leave this matter safely in your hands, for if I quote Mr. Leeds' answer when your Honorable Committee asked him what effect this tariff would have upon the independent roads, he stated he had never examined into the costs of operation, the prospects of freight and travel, or the condition of the country, or even into the cost of the construction of the various railroads. *I think Mr. Leeds, himself, has already given a negative answer to the proposed bill, as far as our road is concerned.*

J. F. BURGIN,
President.

STENOGRAPHICAL TRANSCRIPT

OF SPEECH OF

SECRETARY AND CONTROLLER MELLERSH

Before Senatorial Committee at Sacramento.

MR. CHAIRMAN AND GENTLEMEN: No measure has ever come before the Legislature of California of as great importance to the road I am here to represent as the present amended bill, or present bill before the Legislature.

It would be fallacious at this time to predict how far-reaching it may be, but the measure that has been introduced here has already preceded us and has gone as far as Chicago.

In order, gentlemen, that we may fully make you conversant with our road, and what we have to give you in the way of statistical details, I would like, with your permission, to present you each with a copy of our Annual Report, that you may more clearly follow me.

[*Each member of the committee was here presented with a copy of the Annual Report of the San Francisco and North Pacific Railway Co. for the year ending June 30, 1892.*]

Our road, gentlemen—if you will turn to the first page—you will notice, commences—you will find by the map—at San Francisco, and we run to Point Tiburon, employing in the operation of ferriage three steamers, one of which was burned January 1st, leaving but two. From Tiburon we run to Ukiah, north, a distance of 106 miles, and at Ignacio we run to Glen Ellen, a distance of thirty miles east. At Santa Rosa we have a branch to Sebastopol, and from Fulton we run to Guerneville. The total mileage—if you will kindly turn to the first page in the printed matter—you will find is one hundred and sixty-four miles and sixty-five hundredths. The first feature that we would like to ask you, gentlemen, to consider, is one of the factors in our operating expenses, and will be found on page forty-five, table F. You will there find that we spend—this little company of ours—the amount of nineteen thousand, eight hundred and ten dollars and twenty-three cents per year—the third line—for advertising. Of course, you will say that this advertising is for our benefit. We grant it, but in order that we may bring people to California we spend a good deal of that advertising money in New York. We even go so far as to put articles in New York papers. We even go so far as to print books and circulars, and send them East and distribute them, and we do not stop at New York ; we cross the Atlantic Ocean and put those folders and papers in Germany. Now, gentlemen, if people come here from such remote parts and pay us the fare for traveling over our road, which they consider reasonable, I do not think the people of this State should be dissatisfied, for I think the State gets infinitely more benefit therefrom than we do.

The next feature I will ask you, gentlemen, to turn to is on same page, and below—you will find that the cost of operating our steamers, consisting of steamer repairs, steamer expenses, wages of crews and dock repairs, and fuel for steamers, amounts to ninety-one thousand, eight hundred and thirty-five dollars and twenty-one cents. But, gentlemen, the expenses do not stop there. While we show that as being the cost of operating our steamers, with your permission, Mr. Chairman, I would like to now give you a further statement.

[*Handing statement showing Cost of Operating Steamers, to each member of the committee. See Table A.*]

In addition to the actual running expenses, ninety-one thousand, eight hundred and thirty-five dollars and twenty-one cents, as shown on that statement, you will find that we pay for rent of slips to the Harbor Commissioners, fourteen hundred dollars per month—amounting to sixteen thousand, eight hundred dollars per annum; further, we pay also to the Harbor Commissioners, for switching cars, seventy-five cents for each car, amounting to five thousand, five hundred and five dollars per year. This latter figure is approximate. Making a total for operating our steamers of one hundred and fourteen thousand, one hundred and forty dollars and twenty-one cents. The percentage of operating the steamers to gross receipts, or in other words, out of every one hundred dollars that we take in for gross receipts, we pay out twelve dollars and eighty-seven cents, or twelve and eighty-seven hundredths per cent; the percentage of cost for operating our steamers to gross expenses, is nineteen and eighty-five hundredths per cent. Now, if you will consider the fact, that outside the Southern Pacific Company, the North Pacific Coast and ourselves, we are the only one that is taxed with this most extraordinary expense, it does seem to me that therein lies a fact why we, above all other *companies*, should have at least some special consideration.

Then, gentlemen, while the steamers, as I have outlined, show so much cost to operate them, it does not altogether rest there, because they are constantly being disabled.

For instance, the steamer "Tiburon," over a year ago, broke her shaft—cost about five thousand dollars to replace it—besides, we lost the use of the steamer for two months. Only last month she broke her crank-pin—cost three or four hundred dollars and laid her up two to three weeks. Then, in order that she might begin the year auspiciously, on the first day of January, she burned up; true, she was insured, but the cost to put that steamer into service again, over and above the amount that we shall recover for insurance, will be a considerable amount—in fact, quite an item. These are points, gentlemen, that we particularly wish you to take into consideration this evening.

Our little road is not by any means a cheap road to operate in the matter of grades. Our grades are particularly heavy. We will take, if you like, Colonel Morgan's Report. It is good enough for us, and I suppose you will be satisfied to take his figures. I have had them verified by our Engineer, and he shows that after leaving Tiburon, just above San Rafael, we have a grade of one hundred and forty feet to climb; further on, one hundred and fifty-one feet; then it drops down to ninety-nine, and finally, near Ukiah, it is six hundred and ten feet above sea-level. In connection with that matter, all of our heavy traffic has necessarily to pass over the worst grade—the worst grade is just above San Rafael—so that all of our north-bound and all of our south-bound traffic has necessarily to pass over that heavy grade.

To show you the additional cost to operate over heavy grades on our road, I will read from the Engineer's report:

"The aggregate length of tunnels on this road is eight thousand, nine hundred eighty-nine feet, or one and seven-tenths miles. He says the maximum grade going north is one hundred and three-tenths per mile. Passenger locomotives will haul seven cars north and ten cars south; an extra locomotive being used in trains exceeding these numbers. Freight locomotives haul twelve cars north and eighteen cars south. When trains exceed these numbers, extra locomotives are used, or two or more trips made. Maximum grades, in both directions, are near San Rafael, only ten miles from the southern terminus, and nearly all passenger and freight traffic to and from San Francisco must be hauled over them." In tunneling, I show you that on our road it is greater than on the Pennsylvania Railroad. I don't think it would have occurred to you, that we, a little road running from San Francisco to Ukiah, one hundred and sixty-five miles, have more tunneling on our road than the Pennsylvania Railroad Company; in other words, one and seven-tenths miles of tunnels. How expensive those are to keep up, to carefully and constantly watch, no one but a railroad man knows.

The next thing, I would like to call the attention of the committee to, is the rough country, We run over a very rough country and a very sparsely populated one; from Ignacio to Glen Ellen is a valley, and we run through a marsh. The Southern Pacific parallels us through this valley. The valley, itself, is but one and one-half miles wide, and the population is so slim that it is hard to find them; and you can imagine how much two roads can earn in that mile of territory. You can infer how little traffic there is for us.

Now we come to Cloverdale and the new extension to Ukiah. From Cloverdale to Ukiah, thirty miles, with the exception of Hopland, where there are a few houses and a small number of people, there is absolutely nothing but high bluffs, rough country and sheep ranges. We don't transport the sheep and we hardly transport the ranges.

The next feature, and the one of very great importance, is the question of fuel. You have heard that discussed before. Our friend, Leeds of the Traffic Association, made the assertion here, in fact, he made several, that in the matter of fuel, we can do relatively so much more than Eastern roads. In connection with that, I have prepared some figures and I would like to submit the statements to your committee.

[*Handing each of the committee a statement. See table B.*]

In this statement—if you will please follow me—in the first column, I show the average number of cars in passenger trains; the average number of tons per engine mile; the miles run per ton of coal; the average cost per engine mile for fuel; pounds of coal used per engine mile; average cost of fuel per ton. So as to make a fair comparison with our company, I have chosen the Queen and Crescent system. The Queen and Crescent system runs in an air line from the city of Cincinnati, Ohio, through Kentucky, Tennessee, Alabama, Mississippi, into New Orleans, Louisiana. Again it runs from Meridian, in Mississippi, to Vicksburg, Mississippi, there crosses the Mississippi River and runs to Shreveport. Those States that it runs through, excepting Ohio, for instance, Kentucky, Tennessee, Louisiana, Alabama and Mississippi, are all, more or less, of an equable climate. The lower States compare not unfavorably with our own climate here. As Mr. Leeds has seen fitting to lay so much stress on equable climate, it is just as well to give him a little climate. Now, gentlemen, if you will then follow me, having explained the different features of our road, you will find the San Francisco and North Pacific Railway hauls an average number of cars in passenger trains, four and one-tenth; the Cincinnati Southern—that is their Division running from Cincinnati to Chattanooga, Tennessee, three hundred and thirty-six miles, four and three-tenths; the Alabama Great Southern, two hundred and ninety-five miles, running from Chattanooga to Meridian, four and nine-tenths; the New Orleans and North Eastern, one hundred and ninety-six miles, four and five-tenths; the Alabama and Vicksburg, one hundred and forty miles, five and one-tenth; Vicksburg, Shreveport and Pacific, one hundred and seventy miles, running from Vicksburg to Shreveport, across the Mississippi River, four and six-tenths.

In the next column the average number of tons per engine mile is sixty-three and sixty-hundredths on our road; the average number of tons per engine mile on the Cincinnati Southern Railroad is two hundred and one and nine-hundredths, or, you will thus see, three times as much as ours; on the Alabama Great Southern Railway, one hundred and seventy eight and ninety-eight hundredths, or three times nearly; on the New Orleans and North Eastern, two hundred and four; the Alabama and Vicksburg Railway, two hundred and thirteen, and on the Vicksburg, Shreveport and Pacific, one hundred and twenty-six.

Now, gentlemen, the miles run per ton of coal. We make nearly double the mileage. Our road is forty-five and eighty-six hundredths; on the Cincinnati Southern Railway it is twenty-three and seventy hundredths; on the Alabama Great Southern Railway, thirty; the New Orleans and North Eastern, twenty-seven and ninety hundredths; the Alabama and Vicksburg, thirty-two and fifty hundredths; the Vicksburg, Shreveport and Pacific, thirty-seven and twenty hundredths. It is very easy, I think, for you to see, gentleman, why we can make nearly double the miles per ton of coal, when we haul sixty-three tons as against their two hundred. In fact, to make the figures relative, we should run three times the number of miles if we only haul one-third the tonnage.

Again, the next figures: The average cost per engine mile for fuel. Our road, you will notice, is sixteen and one-tenth cents; the Cincinnati Southern Railway, five and seventy-seven hundredths cents, or about one-third; Alabama Great Southern Railway, four and fifty-five hundredths cents; New Orleans and North Eastern, seven and thirty-one hundredths cents; Alabama and Vicksburg Railway, five and eighty hundredths cents; Vicksburg, Shreveport and Pacific, seven and fifty-one hundredths cents.

The next feature that Mr. Leeds made, and which I remember distinctly, is that we here ran a mile on fifty-five pounds of coal, as against any eastern road running a mile on one hundred and ten pounds. I believe that was right.

If you will refer to our column, you will find that the pounds of coal used per engine mile by us is fifty pounds; with the Cincinnati Southern, ninety-five pounds; Alabama Great Southern Railway, seventy-four pounds; New Orleans and Northeastern, eighty pounds; Alabama and Vicksburg, sixty-nine pounds; Vicksburg, Shreveport and Pacific, sixty pounds. But these companies consuming more fuel to run the mile, haul over three times the amount of tonnage that we do.

The next column is the average cost of coal per ton —and right here I would like to interpolate the fact, gentlemen, that these figures, in fact, I will substantiate them, with your permission, as I proceed. You can see for yourselves that these figures are not gathered up for the purpose of making argument, but they are actual facts, and by the statement I now submit, you can follow them just as readily as I can.

The average cost of coal per ton on the San Francisco and North Pacific Railway is seven dollars, twenty-five and forty-seven one hundredths cents; Cincinnati Southern is one dollar and thirty-seven cents; Alabama Great Southern is one dollar and thirty-six cents; the New Orleans and Northeastern is two dollars and three cents; the Alabama and Vicksburg Railway is one dollar and eighty-eight cents; the Vicksburg, Shreveport and Pacific Railway is two dollars and seventy-nine cents.

I am exceedingly sorry that Mr. Leeds is not here to-night, for I would have liked him to have heard the figures.

Again, gentlemen, we will refer, if you please, to the climatic conditions. Mr. Leeds has seen fitting to allege that on account of the climatic conditions we can do all kinds of impossible things that eastern roads cannot do. Now, let us see how that comes out. In the matter of snow on our roads, we are not troubled with it. Our friends, the Southern Pacific and other roads are. The slides and washouts we are troubled with, because we never have a heavy rain that we do not have slides and washouts. In fact, up above Cloverdale, where the bluffs run high and the hills slope back for three or four hundred feet high, just as soon as we remove earth from the base and the water comes down, it carries the hill with it, and we find our track, instead of being on firm earth, is out in the river. This is not an infrequent occurrence.

In the matter of cross ties, Mr. Leeds distinctly made the statement the other night that the eastern roads replaced their cross ties two or three times as often as we do. Now let us see if it is so.

I call your attention, Mr. Chairman, to a comparative statement of replacement of cross ties.

[*Mr. Mellersh here handed each of the Committee a statement in regard to cross ties. See Table C.*]

You will notice it gives the names of the railroads, the number per one hundred thousand ties replaced for years 1891 and 1892, and cost per tie. I again use the same roads, because, as I previously stated, they run through States where the climate is about as equable, as a general thing, as our own. I have lived there and I know whereof I am speaking.

On the San Francisco and North Pacific Railway we replace per one hundred thousand cross ties per year, fourteen thousand five hundred, or one-seventh, and the cost per tie is thirty-five cents.

The Cincinnati, New Orleans and Texas and Pacific Railway replaced twenty thousand per hundred thousand cross ties, or one-fifth the first year, or one-fourth the second year, costing thirty cents per tie.

The Alabama Great Southern Railway replaced twenty thousand in 1891, or one-fifth, and in 1892 one-fourth, at thirty cents per tie.

The New Orleans and Northeastern Railway replaced only ten thousand, you will notice, or less than ourselves by forty-five hundred per hundred thousand, one-tenth as against our one-seventh in 1891, and one-ninth the next year against our one-seventh, and they paid for their ties twenty-five cents each.

The Vicksburg and Meridian replaced twenty thousand or one-fifth in 1891, and one-fourth in 1892, at thirty cents per tie.

The Vicksburg, Shreveport and Pacific replaced twenty-five thousand cross ties or one-fourth, the first year, and one-fifth the second year, at a price of thirty cents per tie.

But, the whole of the question does not rest there, Mr. Chairman, for the fact that we, in California, use mainly redwood for our ties; East, they use largely pine. Our engineer, who has studied this question, says:

"From the above, it will be seen that the average life of ties, principally of pine, referring now to Eastern ties on the Queen and Crescent road, with the exception of the New Orleans and Northeastern, is from four to five years."

"On this road, the average life is seven years. While the redwood is an excellent wood to resist decay, from the fact that it is very soft, a majority of the ties on this coast are renewed on account of being worn out or cut out under the base of the rail." The fact also remains, Mr. Chairman, that inasmuch as those Eastern roads run much heavier engines than we do, haul so much heavier loads and longer trains; they, as compared with ourselves, would naturally use ties a little oftener, but we claim that our one-seventh against their one-tenth is not an unequal comparison.

Hence, Mr. Leeds, in having made the assertion that we can use our ties two or three times as long as they can East, is not according to records that we have obtained, and we contend our records are reliable and strictly correct."

Now, gentlemen, he made another assertion—it is becoming a hackneyed assertion—but I went to the pains of asking our General Manager and our Engineer to figure out results, in reference to the assertion made by Mr. Leeds, in regard to the use of cross ties for fence posts; and I would like him to know that it is a fact that we do use some of our cross ties, after they have been taken out of the track, for fence posts, and so far as we can find out, during the last three or four years, we have used a sufficient quantity to result in the saving to our company of something like, all told, an aggregation of one hundred and fifty-nine dollars.

It is also a fact—and with so many railroad men present, if I do not make figures that are absolutely reliable there are plenty here that would catch me up—that a railroad company does duplicate its road practically in every ten or fifteen years, so far as its road bed is concerned; that is, the ties and rails and wooden bridges and equipment, but iron bridges not so often; they might run to twenty or twenty-five years, or perhaps longer. But, you say, we have an engine that we have been using for twenty years. Yes, we have, but during that time that engine has had new driving wheels, new trucks, cylinders, new jacket and perhaps so much has been renewed of the original parts of that engine that you can say it is not the same engine. Now, if you will take that fact in consideration, that a railroad has practically to duplicate itself in every ten or fifteen years, you can see what resources railroad men are put to in order to maintain, at all times, a standard, not only required for the safety of the people, but for the safety of the road.

Another feature we have to contend with, lies in the fact that our traffic, if you will kindly refer to page fifty-eight, table M, shows that products of the forest is twenty-five and ninety-six hundredths per cent of our total freight traffic ; therefore, on such conditions we are relying on timber, lumber, shakes, shingles and tan bark and such forest products for that much of our revenue. By reason of the country contiguous to our railroad at Guerneville, Ukiah and other sections having been cleared, the haul ot such timber, lumber, etc., is so costly that hardly any of the shippers can now ship the same quantity as heretofore, by reason of such expense of hauling. Therefore, our revenues by such reasons are mulcted to that extent. Then, again, we haul rock, and in hauling rock we get something between half a cent and three-quarters of a cent per ton per mile; or, if you figure out the cost of hauling, it results in an actual loss to the company. Then, again, we have no mineral traffic to haul, excepting blocks or something like that; we have no coal; so that our road is purely dependent on agricultural and forest products shipments.

Again, another feature, and which I particularly wish you to bear in mind, lies in the fact that we are subjected to the severest competition. At San Rafael, and as high as Petaluma, we have water competition. The sloughs run up as high as Petaluma, so that steamers and schooners run at all times, and they haul freight so exceedingly low, because their cost of transportation is so low, that no railroad company can compete with water transportation. That harasses us more than you can imagine, and hurts our revenue not a little.

In regard to the measure now before you, Mr. Chairman, of making rates three cents per mile, I would beg to say that the State has given us the permission to charge fifteen cents per mile.

Chairman Earl—Wherein?

Mellersh—The laws of the State, I believe; the Commission. To show you that we, as a corporation, are always willing to conform to the laws, and do better than the law requires, our average rate per passenger per mile, if you will kindly refer to another table, table J on page fifty-three for last year, is two and two-hundredths cents per mile. The reason why that figure is so low, I will explain to you. It lies in the fact that a good deal of our traffic is suburban traffic. That traffic consists of three or four hundred, or may be less, people who pay us five dollars per month for carrying them sixty trips, each trip being sixteen and a half miles, or less than half a cent per passenger per mile. Then again, to hunters and excursionists, to all those who come in parties, we are always ready to meet them half-way on any proposition they may have to offer; so that I contend that our passenger rate, two cents per mile, compares very favorably, when you consider the expense of operation, with any railroad fare in the world—not only America—but the world.

Now, gentlemen, a word as to the cost of our property. Mr. Burgin, in his report, and I confirm all that the President has said, made the statement that our road cost seven million, ninety thousand and fifty-nine dollars and twenty-six cents. Mr. Leeds has contended —I don't exactly remember where, but I think that such can be borne out as the fact—that a railroad company cannot, he says, expect to earn dividends upon its present or original cost, because railroads can be built now cheaper than when they were originally constructed, and he gets out of it by saying, that if you make a bad investment, that is your affair. That is all right. We are willing to concede the fact, that our road cost seven million, ninety thousand and fifty-nine dollars and twenty-six cents; we are willing to put it on the basis of seventy-five cents per dollar upon such cost in order that we may, to-day, make a fair return to the investors in the property. Three-quarters of the value of the figure I gave you would amount to five million, three hundred seventeen thousand, five hundred and forty-four dollars, forty-four cents. The mortgage bonds of the road are four million, one hundred eighty-eight thousand dollars, leaving, therefore, one million, one hundred and twenty-nine thousand five hundred and forty-four dollars and forty-four cents. Now, then, on Mr. Leeds' basis, we should earn a dividend on that, and I think five per cent, you will concede, is a fair dividend. Five per cent on that would result in giving us fifty-six thousand, four hundred and seventy-seven dollars, or less than one per cent upon the present capital stock of the company. On that basis we could pay on one million, one hundred and twenty-nine thousand, five hundred dollars and forty-four cents; five per cent equal to fifty-six thousand, four hundred and seventy-seven dollars. Before, however, we can pay one dollar out in dividends, we have to pay for interest on the mortgage bonds per year, two hundred and nine thousand, four hundred dollars, in addition to which a sinking fund of twenty-five thousand dollars; making a total of two hundred and thirty-four thousand, four hundred dollars, which must be provided, otherwise it means foreclosure.

Therefore, gentlemen, I contend that last year, per page number ten, if you care to refer to it, you will find that we succeeded in obtaining a net result of eighty-one thousand and seven dollars and nineteen cents, which under ordinary circumstances would have been available as dividends, but — and there always seem to be a but in these dividend questions— the money has never been paid to the stockholders. In fact, since the inception of this company, the nineteenth day of March, 1889, up to now, not one dollar has been paid to the men that put their money in the property, in the way of dividends. Therefore, is it not fair, is it not right, to ask you gentlemen to pass no measure that shall disturb our present basis?

Now, Mr. Leeds seeks to introduce—or the Traffic Association, or by some means, I don't exactly know how—a bill on what he calls a California Distance Tariff. I beg to hand you, Mr. Chairman, a comparative freight tariff, and by way of explanation, I would like to say that you will see under the class rates the first column is our rates at present in effect, the blank columns are the rates that would be in effect under this distance tariff. You will therefore find that five miles and under, where we now get per hundred pounds five cents, this new schedule would give us but three and three-quarter cents; then, if you like to jump down to say fifty miles, you will find where we are now getting thirty-seven cents this new measure would give us twenty-five cents; then, if you like to jump down further, to say eighty miles, you will find that where we are now getting forty-three cents, we would get thirty-five under the new tariff.

These rates, Mr. Chairman—and we have figured them out carefully—simply mean that it is an absolute reduction in our present freight tariff of between thirty-five and fifty per cent on our class rates, and on our carloads business—and most of our traffic is carloads—consisting of lumber, shingles and stuff like that, the reduction would be, and I will read them out to you: Fifty-two per cent; fifty-four per cent; fifty-one and a half per cent; fifty per cent, fifty-one per cent, and so on; plainly showing to you, gentlemen, that the reduction would mean to this company a cutting down of our freight revenue by the introduction of such an amendment of over fifty per cent in our revenue.

Col. Morgan, in his report, has given a statement showing the population of the country, which Mr. Burgin made to you; but he makes another statement here that I think gives a good deal of information, and will illustrate how much of certain commodities we have to draw from. We consider that wine, grapes and such commodities are quite large factors in our business.

If you will look at his report you will find that Mendocino County contains an acreage in grapes of about 204 acres; in Marin County about 502 acres, and in Sonoma County about 22,683 acres; so that our railroad has only about 23,000 acres to draw from to get the wine shipments and grape shipments, which are, as I said, quite large percentages of our traffic.

Again, the entire population of the three counties is only 60,000, about, and out of that 60,000 there is the San Francisco and North Pacific Railway, the North Pacific Coast Railway, the Southern Pacific Company and those schooners and steamers that go up there to draw from; when we all cut up that 60,000 we don't get many each.

In buying our material in California there is quite an element in the additional cost of operating. Cast iron per pound in Kansas is one and seven-eighths; here it is four cents; wheels, and we are bound to have wheels for our cars, cost in St. Louis eight dollars and a half, in New York they cost eight dollars and seventy-five cents and here they cost us fourteen dollars.

Now, gentlemen, that high rate—not the high rate, but the difference in price—does not rest in the fact that the railroad companies are charging too much to get them here, but it is all attributable to the fact that America is too big; the country ought to be condensed and we could then get our supplies cheaper.

In starting out, Mr. Chairman, I stated to you that already what we were doing in California was making itself felt East. I don't know whether or not this committee would care to know the opinion that the railroad papers think of the situation in California. If you do not wish to hear it, I will not read it.

Chairman Earl—Proceed, Mr. Mellersh.

Mellersh—The *Railway Age*, published in Chicago, under date of January 20, 1893, reads as follows:

> "The bitter and vindictive warfare which is being waged by many of the newspapers and people of Northern California, more especially those of San Francisco, against the railway companies of that State, furnishes an extraordinary example of ingratitude and injustice. Because California is cut off by thousands of miles of desert and mountains from the great markets of the world, and because within its limits the construction and operation of railways is attended with great expense, owing to the character of the country,

the lack of diversified industries, the high cost of fuel, and the maintenance of large land holdings, railway rates naturally have to be higher than they are in the thickly settled and productive East. And yet, it is against this result of natural causes that the popular clamor is so unreasonably raised. The demand is in effect that the railways shall literally annihilate distance and ignore nature, so far as their charges are concerned, and give the people of the mountains and plains of California as low rates for transportation as are offered in Illinois and New York. It is in vain that the railway companies set forth the cost of constructing their pioneer roads across the continent, point to their load of debt and show that the expenses of operation absorb the earnings, so that bankruptcy has overtaken some and threatens all the lines. San Francisco merchants, fruit and grain growers, and the politicians and papers that follow after popularity, repeat the cry, 'rates must come down,' and demand that all the power of the State government shall be employed to this end, oblivious of reason and justice."

"Accordingly, the session of the Legislature just convened promises to be memorable for the passage of laws intended to crush the railways, particularly the Southern Pacific Company, which having developed the State into independence, is now inconsistently denounced as its enemy. Already three hostile measures are under consideration. First, Shanahan's concurrent resolution, providing for a Constitutional Amendment abolishing the Railroad Commission. Second, Schlessinger's resolution, providing for the appointment of a special committee to investigate the railroad commission, and to prepare articles for the impeachment of one or more members of the Commission, if the special committee deem impeachment justifiable. Third, the Traffic Association resolution, providing for a Constitutional Amendment abolishing the Railroad Commission, authorizing the Legislature to fix rates for freights and fares, and providing in the Constitution a tariff to be operative in case the Legislature should not fix rates."

"The last proposed measure upon which Mr. J. S. Leeds, as manager of the Merchants' Traffic Association, has concentrated his ability and long experience in the railway service, is an extraordinary embodiment of reckless enmity to the railways. It proposes not only to abolish the Railroad Commission, which has shown some disposition to be fair to the roads, but to insert in the State Constitution a schedule of maximum rates for fare and freight, far lower than those now obtained, which rates shall be charged if, for any reason, the Legislature fails to fix a tariff. Such matter has never been embodied in the Constitution of any State, and the proposition to make it part of the organic law, shows the desperate animosity of its authors toward the railways, and their determination to prevent the sober and reasonable regulation of the rate question by the representatives of the people from time to time, as the facts and conditions shall seem to warrant. The proposed amendment contains a complete table of freight rates fixed to suit the fancy of the shippers, and very much lower than those which the railways consider it possible to operate their roads upon; while the matter of passenger rates is easily settled by declaring that they 'shall not be more than two cents per mile,' a rate to which none of the old and populous States in the country (excepting the case of a small portion of the New York Central Railway), has ever had the heart to restrict its railways. In view of the extraordinary conditions surrounding railway operations in California—some of which were shown in the extract which we recently published from the testimony of an impartial expert, employed by the Railroad Commission—it is not creditable to the intelligence or sense of fairness of the people of California to believe that they will ratify such a monstrous enactment, against one of the interests of the State, as is thus threatened. An enactment in comparison with which the anti-railway legislation of the granger demagogues of Texas, appears mild and tender-hearted."

Chairman Earl—Where is that published?

Mellersh—In Chicago. I will file it with the committee if they wish to have it.

Railroads, Mr. Chairman, are quasi-public in character. When people get an idea that railroads must reduce rates, they don't exactly find out the cause, but they make up their minds it must be so. To convince them to the contrary is very much like the man, you will remember, who refused to wear clothing. When asked why he refused to wear clothing, he replied: "Well, when you can bring a man to me who will convince me why it is a sheep raises wool out of eating grass, I will wear clothing." That man went naked, and so he ought to.

We meet the people on any reasonable request. If they want special rates we give them, and it does seem to me that inasmuch as our company practically have pleased all of our patrons, because there is nothing on file except two little citations, that did not amount to anything, it does seem hard that we who are struggling along for the purpose of trying to make a living, trying to give the people some little return for the money they put in it—I say it seems hard that the Traffic Association shall get up in their might and ask the Legislature to enact a law that will simply crush us out of existence.

It would not be very difficult, Mr. Chairman, to define two pictures. One shall be ten years hence, if you like. The sun is rising, gilding the mountain tops, and as it climbs up the horizon lights up our beautiful and fertile valleys. On each side you see trees in their blossom, later on the golden fruit and the waving corn, undulating with the breeze, the people going to their business, traveling in palace cars and palatial steamers, all happy and the population of the State increasing.

The other side would be, the Legislature having enacted a law that shall practically crush out all little railway companies, and where erstwhile the bright, steel rails were, two lines of rust now are, with grass overgrown, the cars and engines side-tracked, and everything having the appearance of innocuous desuetude; the population decreased, this beautiful State—none better in the Union—instead of being prosperous, simply standing still, or perhaps retrograding.

Mr. Chairman, I do not want to take any more time of your Committee, but it does seem to me that we have given you such facts and figures as will clearly evidence to you why such a law, as that now proposed, should not be enacted in this State. In fact, pleadingly, I might almost say pathetically, we ask you not to pass any law that will not let us make a return to the people who have in good faith invested in our property. How can we go East or across the ocean and ask people to come here and buy our bonds? How can we ask people to extend our roads and put their money in them? Will they not say, at the first legislation we get no return, why should we send our money? This question, Mr. Chairman, will be further reaching than California. It does not stop at California. It will stop almost everything; it will clog our wheels; it will hamper our roads; it will stop our State ten years, in my opinion, if any such bill is passed.

And we now ask, gentlemen of the committee, that you consider this proposition most seriously and not pass any bill that does not fix bases as high as they are now, so that we shall be enabled, thereby, to earn as much as we do now.

Mr. Chairman and gentlemen, I thank you for your kind attention.

Senator Gesford—I think the line of argument, in reference to these short roads, will be about the same in each case. The road I would like, particularly, to hear from is the Southern Pacific Company, and I would like to have a time fixed for them ; that is last on our list, and I have some other matters to attend to. Mr. Leeds is unable to be here, but I think I have the trend of the argument of all these short roads.

Chairman Earl—During the evening, Mr. Gesford, we will fix the time when the Southern Pacific Company will be heard.

Senator Gesford—Well, then, I will go before the other committees, as most of this argument will be written out anyhow.

ADDENDUM.

As Mr. Leeds, of the Traffic Association, was not present at Sacramento when making my argument, and, as he permitted publication of an interview he had with the *Examiner* in that paper under date of February 3, 1893, I feel constrained to answer his allegations. Mr. Leeds is reported as having made the following statements:

> "They (the railroad companies) have tried to ridicule my assertion about cross ties being much cheaper in California because they last so much longer than in the East. The assertion is true. The Southern Pacific uses thousands of its old ties for fence posts, and every tie so used is at least a saving of ten cents.
>
> MELLERSH WAS UNFAIR.
>
> "Thomas Mellersh of the Donahue road was unfair when he took the experience of the Queen and Crescent system with ties, and compared it with his road. It is notorious that the Queen and Crescent has very cheap white oak ties that last a long time. The road runs for miles through white oak forests from which it gets its ties. Yet, what did he show? He showed that his redwood ties lasted seven years and the other road's white oak ties but five years. Why did he not take one of a hundred other Eastern roads that use cedar ties? If he had done so the advantage to his road would have been shown up very plainly. Railroad expenditures for ties in this State are very much less than in the East, and any intelligent man knows it."

You will observe that Mr. Leeds charges that I was unfair in selecting the Queen and Crescent system, because he claims it to be a notorious fact that they use very cheap white oak ties.

Waving the assertion that I chose the Queen and Crescent system because of that particular reason—which I emphatically say was not the case at all—let us see if the "notorious fact of that company using very cheap white oak ties" is, or is not, true.

I would not predicate my assertion alone on statistics obtained from the annual reports of that company, but, in order to elicit the true state of affairs, I telegraphed to the vice-president of that company, and a copy of such dispatch is herewith subjoined:

San Francisco, February 3, 1893.

C. C. Harvey, Vice-President Queen and Crescent System, Cincinnati, Ohio:

For statistical purposes, we wish to obtain, quickly as possible, percentage of white oak, pine and any other kind of cross ties used on your system, for last fiscal or calendar year, and average cost for each kind per tie. Approximate figures will answer. Kindly telegraph at our expense. (Signed) Thomas Mellersh.

On February 4th, 1893, the following answer was received:

Cincinnati, Ohio, February 4, 1893.

Thos. Mellersh, Controller, San Francisco and North Pacific Railway, San Francisco.

Cross ties used Queen & Crescent system during fiscal year, ended June 30th, 1892:

Oak,	$64\frac{1}{10}$	per cent, average cost per tie	$28\frac{7}{10}$	cents.
Pine,	$34\frac{5}{10}$	" " " " " "	$27\frac{9}{10}$	"
Cypress,	$1\frac{4}{10}$	" " " " " "	$30\frac{4}{10}$	"

(Signed) C. C. Harvey.

Two very pertinent facts are clearly brought out:

Firstly, that only $64\frac{1}{10}$ per cent of oak ties are used on the Queen and Crescent system; and,

Secondly, that the oak ties cost $28\frac{7}{10}$ cents per tie, as against pineties costing $27\frac{9}{10}$ cents per tie; thus confirming my statements made to the Senatorial Committee, and not confirming the inference in Mr. Leeds' newspaper interview relative to the "notorious fact of cheap white oak ties, used on the Queen and Crescent system."

It is also asked why I did not take, for comparison, one of the hundred other Eastern roads that use cedar ties.

I reply by stating, that the reason *alone* that prompted me to select the Queen and Crescent system was because I worked for that system several years, was familiar with their accounting, and knew, by experience, that rigid and strict accounting was, at all times, maintained; hence, in using their data I felt assured of its correctness.

I now subjoin a statement prepared from the annual reports of some other Eastern railroads—all that are available to me—and from a careful examination of these statistics—see table D—it will be conclusively found that they substantiate my figures and data primarily submitted to the Senatorial Committee.

Traffic Manager Leeds also asserts in the newspaper report, already referred to, that I am "trying to produce a scare." The following is his statement:

> "Mr. Mellersh and the other gentlemen who have addressed the committee are trying to produce a scare by saying that if the bill becomes a law it will prevent them from building extensions and frighten capitalists away from here. The bill will do nothing of the kind. Instead of retarding California's growth, it will help give it a stimulus. Low local rates and Panama competition will, without doubt, increase business all over the State, and increased business means more wealth and more people. When these begin to come more roads will come. If these gentlemen do not want to build more extensions, plenty of other people will do so."

Whether or not I am unduly alarming the people of California by showing that the proposed amendment to the constitution will frighten capitalists away, is best answered, in my opinion, in the *Railroad Age* and *Northwestern Railroader*, in the editorial of their issue of February 3, 1893, which is tersely worded as follows:

OPERATING DIFFICULTIES OF CALIFORNIA ROADS.

The reference made in our issue of January 6 to the report of Col. R. T. Morgan upon the subject, "What would be just and equitable rates of freight and fares for the railroads of California?" has called out from several of the newspapers of San Francisco responses in which the effort is made to break the force of the statements showing the injustice of the popular demand for sweeping reductions in railway rates in that State. The high cost of fuel, the heavy mountain grades, the unpeopled and unproductive character of a large part of the territory, the large holdings of lands for pasturage, and the remoteness of the producers from the markets of the world, were mentioned by us as among the causes for the heavy expenses and small earnings of the railways of California, and these are all facts patent to the most casual observer. Yet, so unfair is the popular attitude toward the railways, inspired largely by the mendacious sophistries of Mr. Leeds, that even the facts of nature are denied, if they seem to interpose a plea for fairness towards the railways. Under the unjustifiable heading, "A base plot; the effort to perpetuate excessive freight rates; the misrepresentations in the report of expert Morgan," the *Evening Bulletin* of San Francisco, a fair-minded journal, except when the Southern Pacific Company is under consideration, devotes several columns to an attempt to get around the facts cited by the *Railway Age* and Col. Morgan.

It is not our intention to appear in the defense of Col. Morgan's report, for he has long since established the reputation of being quite able to defend his professional statements, not one of which has yet been disproved, but we reiterate the statements which the *Railway Age* has made. The *Bulletin* attempts to prove that the cost of coal is not so great in California as has been stated, by quoting some statements made in 1887—six years ago—about the price charged for coal at mines in Nevada, Utah, Oregon and Washington Territory, many hundreds of miles away, and requiring a costly haul over tremendous mountain grades and desert wastes, before delivery in California. As well might the *Bulletin* quote the low price of coal in the mines of Pennsylvania and argue that therefore fuel is cheap in California. Facts cannot be set aside by argument so manifestly unfair. Here is what Col. Morgan says:

> The actual average cost of the coal used by the Southern Pacific Company on its lines in California is $6.40 per ton, delivered on the locomotive tenders. The average cost to the San Francisco & North Pacific Railroad Company is $7.25 per ton. The average cost to the railroads in Southern California is $7.80 per ton, the cost to some roads being as high as $9.00.
>
> The average cost of the coal used by all of the railroad companies in California is at least $7.00 per ton, delivered on the locomotive tenders and at the other places of consumption.
>
> From Philadelphia and Baltimore to Chicago and St. Louis and thence to Kansas City, the average cost of coal delivered on the locomotive tenders of the road extending throughout Pennsylvania, Maryland, West Virginia, Ohio, Indiana, Illinois and Missouri may be safely estimated at not more than $1.26 per ton—18 per cent only of the average cost per ton to the roads operated in California.

We believe that these figures are under rather than over the actual cost of coal delivered on the locomotive tenders in California. There is no good coal found in the entire State, and the supply for the railways comes from England, Wales, Australia, the island of Vancouver and the State of Washington—of course, making the cost at the points of consumption very great. The cost of the fuel used by the Southern Pacific Company in operating its roads in California in 1891 was $3,238,886—equal to $1,156 per mile. The same item of operating expense on the Chicago & Alton road was $416 per mile—an enormous difference. The lack of fuel is the great misfortune of California which it is useless to deny or ignore, and fuel is a tremendous item in the cost of operating the railways in that State.

In answer to the allusion to the existence of long stretches of arid and unpeopled land which furnish no traffic for the railways, the *Bulletin* urges that while there are regions of desert and mountain, the valleys and foothills have great productive possibilities, which is very true. But the fact remains that the Southern Pacific road was built for hundreds of miles through an almost uninhabitable wilderness, and that after years of operation the greater part of the line affords but a meager traffic, which does not warrant the low rates that are demanded. The future possibilities of the country do not furnish money to pay present operating expenses. The existence of large holdings of land in the central and upper parts of the State is admitted, but the *Bulletin* says that it is "because the

Southern Pacific Company will not bring hither people who will buy small parcels," which we submit is a poor reply. The large land holders, who have continued even of late to add to their vast domains of unoccupied lands, to the exclusion of productive settlers by whom the railways, as well as the State, would have been benefited, might much more justly be charged with retarding the development of the country.

The *Railway Age* has no pecuniary concern in the Southern Pacific Company, and it has had no communication with any Southern Pacific man in regard to the warfare against it in which some of the people of California are now indulging. But the *Railway Age* believes in justice to railways as well as to individuals, and it cannot but condemn the unfair attitude toward those interests which is being exhibited in California, in even a more surprising degree than in any other portion of the country.

This paper has probably the largest circulation of any railroad periodical, and as it is read by all the prominent railroad men of America, and reaches every principal city in the Union, I leave it to be referred as to whether or not I unduly alarmed the California people, when I stated before the Senatorial Committee that the proposed adverse legislation against railroads would be far reaching and might not stop at the confines of the United States.

In view of the overwhelming testimony showing conclusively how disastrous the effects of such a measure would be to the railroads of California, and that the passage of the act would create, at least, a tendency to retrograde the State of California, I feel that the best interests of this State, would be subserved by the Legislature, in not permitting the proposed bill to become a law.

Very respectfully submitted,

THOS. MELLERSH,

Secretary and Controller,

San Francisco. *San Francisco & North Pacific Railway.*

TABLE A.

STATEMENT OF COST OF OPERATING STEAMERS.

Steamer repairs		$14,956 36	
Steamer expenses and wages of crew		36,667 51	
Dock repairs		3,783 37	
Fuel for steamers		36,427 97	
		$91,835 21	
Rent of slip ($1,400 per month)	$16,800		
Switching	5,505		
		22,305 00	
			$114,140 21

Percentage of cost to gross receipts.....................12.87 per cent

Percentage of cost to gross expenses.....................19.85 per cent

TABLE B.

COMPARATIVE STATEMENT OF CARS PER TRAIN, TONNAGE PER TRAIN AND COST OF FUEL.

NAME OF ROAD.	Aver'ge No. of Cars in Passngr Train.	Aver'ge No. of Tons per Engine Mile.	Miles Run per Ton of Coal.	Aver'ge Cost per Eng Mile for Fuel.	Lbs. of Coal Used per Engine Mile.	Aver'ge Cost of Coal per Ton.
				cts.		Dols.
San Fran. & North Pac. Ry. (162.25 miles)	4.1	63.60	45.86	16.10	50	7.25-47
Cincinnati Southern Ry. (336 miles)	4.3	201.09	23.70	5.77	95	1.37
Alabama Great Southern Ry. (295 miles)	4.9	178.98	30.00	4.55	74	1.36
New Orleans & North Eastern. (196 miles)	4.5	204.04	27.90	7.31	80	2.03
Alabama & Vicksburg Ry. (140 miles)	5.1	213.40	32.50	5.80	69	1.88
Vicksb'rg, Shreveport & Pacific. (170 miles)	4.6	126.31	37.20	7.51	60	2.79

TABLE C.

COMPARATIVE STATEMENT
OF
REPLACEMENT OF CROSS-TIES.

NAME OF RAILROAD	PER 100,000 TIES PER YEAR	1891	1892	COST PER TIE
S. F. & N. P..............	14,500	1/7	1/7	35 cents
C. N. O. & T. P.........	20,000	1/5	1/4	30 cents
A. G. S...	20,000	1/5	1/4	30 cents
N. O. & N. E......... ..	10,000	1/10	1/9	25 cents
V. & M....................	20,000	1/5	1/4	30 cents
V. S. & P...................	25,000	1/4	1/5	30 cents

TABLE D.

COMPARATIVE STATEMENT OF TIE RENEWALS—COMPILED FROM ANNUAL REPORTS.

NAME OF ROAD.	Year Ending.	Mileage.	Total No. of Ties on Basis of 2,800 Per Mile.	Number of Ties Renewed for Year.	Percentage of Renewals.	Cost of Ties. cents.	Cost of Ties in Track. cents.	Percentage of Cost of Tie Renewals to Total Maintenance of Way Expenses.	Percentage of Cost of Tie Renewals to Gross Earnings.
Missouri Pacific	Dec. 31, 1889	5,019	....	....	......	......	38.24	13.2	1.9
Michigan Central	Dec. 31, 1889	2,415	6,762,000	523,617	7.7	......	37.6	10.3	1.4
Michigan Central	Dec. 31, 1890	2,585	7,238,000	531,578	7.3	......	37.7	8.4	1.4
East Tennessee, Virginia and Georgia	June 30, 1890	1,197.5	3,353,000	535,624	16.0	28.5	......	......	......
Chicago, Milwaukee and St. Paul	June 30, 1890	6,901	19,322,800	1,431,378	7.4	44.2	......	......	......
Kansas City, Fort Scott and Memphis	June 30, 1890	856	2,396,800	277,038	10.6	28.2	......	......	......
Ohio and Mississippi	June 30, 1891	636	1,780,800	313,840	17.6	......	......	......	......
St. Louis and San Francisco	Dec. 31, 1888	1,315	3,682,000	478,080	13.0	23.0	......	......	......
Chicago and North Western	May 31, 1891	4,254	11,911,200	1,194,514	10.0	39.5	53.3	18.0	2.3
Lake Shore and Michigan Southern	Dec. 31, 1889	2,318	6,490,400	711,678	10.9	......	51.3	......	1.87
Mobile and Ohio	June 30, 1890	688	1,926,400	178,019	9.3	......	......	......	......
"QUEEN AND CRESCENT."									
Cincinnati, New Orleans and Texas Pac	June 30, 1892	450	1,260,000	267,487	21.2	29.1	43.6	22.4	2.6
Alabama Great Southern	June 30, 1892	369	1,033,200	186,668	18.0	28.6	41.1	26.2	4.1
Alabama and Vicksburg	June 30, 1892	165	462,000	103,341	22.6	24.0	35.7	25.3	5.3
New Orleans and North Eastern	June 30, 1892	233	652,400	63,063	9.6	22.9	34.0	10.3	1.8
Vicksburg, Shreveport and Pacific	June 30, 1892	194	543,200	87,809	16.1	32.1	44.8	23.2	6.2
*San Francisco and North Pacific	June 30, 1891	100	280,000	38,830	13.8	35.0	52.6	14.3	2.4
*San Francisco and North Pacific	June 30, 1892	100	280,000	40,392	14.4	35.0	49.8	14.3	2.3

*Only 100 miles of the San Francisco and North Pacific taken, as balance of mileage was constructed since 1888.

12

THE

TEHUANTEPEC ISTHMUS

RAILWAY

BY

MATIAS ROMERO

WASHINGTON
1894

CALIFORNIA STATE LIBRARY

THE

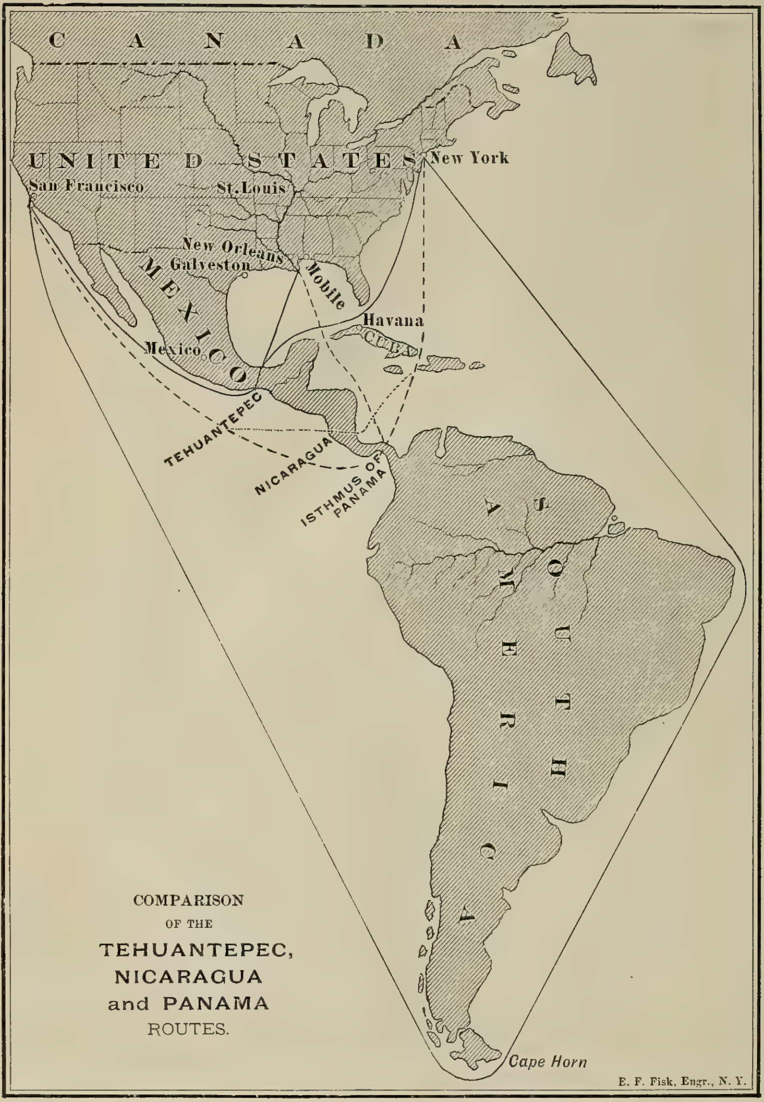
TEHUANTEPEC ISTHMUS

RAILWAY

BY

MATIAS ROMERO

WASHINGTON
1894



COMPARISON
OF THE
TEHUANTEPEC,
NICARAGUA
and PANAMA
ROUTES.

E. F. Fisk, Engr., N. Y.

THE TEHUANTEPEC ISTHMUS RAILWAY.*

MY desire to comply with the request of the editor to write an article on the Tehuantepec railway, now nearing completion, has determined me to prepare a brief sketch on that subject, which will, however, necessarily reflect the haste with which it has been penned, and will express only my personal views thereon.

In writing these lines I am not guided by a spirit of either jealousy or hostility towards the Nicaragua canal. I am persuaded that the canal offering the best conditions will finally be the first built, and therefore that any reasoning tending to disregard this circumstance is idle. If the Nicaragua canal offers the best conditions it will be the first to be built, no matter what reasons or objections may be presented in opposition to it.†

I believe that while Nicaragua would offer more facilities for a canal than Tehuantepec, it would be easier to construct across the latter isthmus a ship-railway, and that the opening of both routes, far from conflicting with each other, would be favorable to the commerce of the world as furnishing two different ways, each with especial advantages for crossing the American continent. Not having myself any pecuniary interest in these schemes, I see them from a higher standpoint, considering only their usefulness to the whole world. I also believe that neither work will obtain any pecuniary assistance from the United States, because, in my opinion, in the present temper of the people of this country, no money will be expended in any work of public improvement outside of its own territorial limits.

---

* The first edition of this article was published by the *Engineering Magazine* of New York, in its number for March (1894), and in Spanish by the *Universal*, a newspaper of the City of Mexico. The article was afterward corrected and completed, and as it is now published contains all the facts connected with the subject, some inaccuracies in the first edition having been rectified.

† On February 8, 1888, I gave to a reporter who interviewed me in reference to the merits of the Tehuantepec route, as against the Nicaragua and Panama, the following memorandum of an interview, which fully expresses my present views on that subject:

"I have taken little interest in the fight and jealousies about the American isthmus, because I believe that this question has to be decided only by its natural, geographical and commercial bearings. There are three principal routes across the isthmus, over which canals or ship-railways have been projected, viz., Tehuantepec, Nicaragua, and Panama. If the present needs of the world's commerce, or its future extraordinary development, require that the three should be opened, and if this is at all practicable, they will be built, whatever may be the obstacles in the way. If one or two are impracticable, for their immense cost or other reasons, it is not likely that they will be built whatever may be the wishes of the nations over whose territory the canal may pass. Mexico certainly would not mourn the completion of any of the other routes, because the opening of either will necessarily benefit the neighboring countries, and in this respect, whatever may be the issue of the question, all American nations will be profited by the completion of any of the intended routes. We believe that we have in Tehuantepec as good a chance for such a work as in any other part of the isthmus, and we wait patiently the result without showing petty jealousy or a spirit of opposition to the other schemes."

Great importance has always been attached in Mexico to the subject of interoceanic communication through Tehuantepec. As far back as the time when Hernando Cortes conquered Mexico and passed through Tehuantepec in his expedition to Honduras, he tried to find a natural pass, like the Straits of Magellan, connecting the Atlantic with the Pacific. Cortes then personally examined the isthmus of Tehuantepec hoping to find that passage. Recognizing the important geographical advantages of the isthmus, he believed confidently that the time would come when a route would be established there between the two oceans. The railroad now being built on the isthmus passes through the lands which, on his application, were donated to him by the emperor, Charles V., and which are now divided into three estates called La Venta, Chicapa and Tarifa, which constitute the Haciendas Marquesanas, named so because Cortes had been made by the emperor Marquis of the Valley of Oaxaca. During the three centuries of Spanish domination this project was in abeyance, because the policy of the metropolis was opposed to all communication of the colonies with the outside world, and the opening of an interoceanic canal was in direct conflict with that policy.

Notwithstanding that fact,—and possibly in pursuance of that policy, either to find out whether there was a natural passage between the two oceans, for the purpose of closing it, or, if there was not such a natural channel, not to open an artificial way, or perhaps desiring a canal for the exclusive benefit of its navy,—the Spanish government caused serious studies to be made with a view to finding a natural passage or to ascertain whether one was practicable to connect the Atlantic and Pacific oceans through the American isthmus. Under Philip II. in the sixteenth, and Charles III. in the eighteenth centuries, careful surveys were made which were remarkable for their accuracy, taking into account the state of science at that time. A complete survey of the Coatzacoalcos river was made in 1610, which together with a map of that river was published in the June, 1882, number of the Bulletin of the Geographical Society of Madrid. The voyage of Baron Humboldt to America at the beginning of this century again awakened great interest in this enterprise, as was exhibited by the action of the Spanish Cortes after the Napoleonic wars.

When the independence of Mexico was accomplished, the first Mexican congress, by an act of October 14, 1823, organized an independent province of the isthmus of Tehuantepec, which then, as at present, comprised parts of the provinces, now states, of Oaxaca and Vera Cruz. The Mexican congress which convened to frame the constitution, adopted October 4, 1824, passed an act on November 4, 1824, providing that the executive should call for proposals for the opening of a route across the isthmus of Tehuantepec, and requesting the executive to collect all necessary information to provide for the building of a canal.

In my opinion the advantages resulting to Mexico from the interoceanic communication were overestimated, since it was thought as stated in the preamble of the grant made by Mexico to Don José de Garay on March 1, 1842, that "the opening of the Tehuantepec route would make Mexico the center of the commerce and navigation of the world." Without denying that such communication is bound to produce results favorable to Mexico, especially in developing commerce and industry on her coast line near the isthmus, I believe, nevertheless, that such expectations were very much exaggerated, and my belief is based on what has happened with the railway across the isthmus of Panama, which has kept open for several years communication between the two oceans. In my judgment the Central American States, in whose ports ply the steamers running between San Francisco and Panama, have been more benefited by that road than Colombia herself, or even the State of Panama, as they have developed their agricultural production and a prosperous traffic to their great advantage, giving value to their lands, work to their people, and a remunerative result to their enterprises, while no marked advantage has accrued to Colombia or Panama. The same experience is shown in Egypt with the Suez canal.

But Tehuantepec has some peculiar advantages which after a time are bound to give it great importance. It not only possesses a healthful climate and a fertile soil, but it is the indispensable pass of the Inter-American railway which will extend from Canada to Tierra del Fuego, and the interoceanic railroad over that isthmus will not be isolated but will make of Tehuantepec an important commercial center. The Mexican Southern Railroad will connect Tehuantepec with the City of Mexico by the way of Oaxaca, and the Cordova and Tuxtepec railroad will connect it with the capital by the way of Vera Cruz, and the Pan American railway will place it in communication with North and Central and South America.

The protracted and bloody struggle sustained by Mexico in order to shake off colonial principles and church rule, and to follow the pathway of progress, precluded for nearly twenty years any effort in the direction of interoceanic communication. However, as soon as there was a respite in the civil struggle, the project was taken up again. On March 1, 1842, General Don Antonio Lopez de Santa Anna, at that time dictator of Mexico, granted a charter to Don José de Garay, to open communication across the isthmus of Tehuantepec, by water as far as practicable and for the rest of the way by rail, beginning the work by a survey of the land and location of the road which was to be done within eighteen months from the date of the contract. Señor Garay entrusted the surveying work to Señor Don Gaetano Moro, an able Italian engineer, who accomplished it very satisfactorily, this being the first scientific survey of the projected road made after Mexico achieved its independence.

The decree of March 1, 1842, just alluded to, which was the first concession made to Garay, provided for the opening of a road through Tehuantepec, and entrusted the building of the same to Señor Garay. That concession was enlarged by a new grant of land, given by a decree of February 9, 1843. Another decree of October 3, 1843, provided for the establishment of a prison in Tehuantepec with 300 convicts to help in the construction of the road; and still another decree of December 28, 1843, extended for one year longer the term of ten months agreed upon in the first grant to begin work on the road after the survey was made. This term expired on June 30, 1845, and that ended the Garay grant, for non-compliance with its provisions, for although he applied to congress for a new extension of the time of the concession, which was granted by the house of representatives in December, 1845, it never was voted upon in the senate. But on November 5, 1846, General José Mariano de Salas, president of Mexico, acting under extraordinary powers, issued a decree ratifying all previous concessions made to Garay, enlarged the land-grants, and extended for two years from the date of that decree the term for beginning the work. This decree was declared void and null by an act of the Mexican Congress of May 22, 1851, to which reference will be made later, on the ground that the president in issuing it had exceeded his powers.

Notwithstanding all these privileges granted to Garay by the Mexican government, he did not even begin the work under the time fixed, because he could not command the necessary capital.

During the progress of our war with the United States, in 1846-47, Señor Garay sold his charter to Messrs. Manning and Mackintosh and John Schneider of London, who, after the war, sold it to a New York company headed by Mr. Peter A. Hargous, but the Mexican government contended that Garay's charter had been forfeited for want of compliance with its conditions, and that all transfers made by him were null and void, not only on that account, but also because the permission of the government to transfer the grant had not been obtained. At the end of that war, by the treaty of Guadalupe Hidalgo of February 2, 1848, the United States acquired an extensive coast on the Pacific ocean, and it became necessary for them to have a short way of communication between their Atlantic and Pacific coasts. Naturally it was thought that Tehuantepec offered the greatest advantages, although the United States, having foreseen that need, had negotiated a treaty with New Granada, signed at Bogota December 12, 1846, in which passage across the isthmus of Panama was guaranteed to them, with other very liberal concessions. For these reasons the United States made great efforts to obtain from the Mexican government a charter similar to the one they had from New Granada, and they asked for it during the progress of the negotiations preceding the treaty of peace; but the Mexican government, fearing, not without reason, a repetition in Tehuantepec of what had just happened in Texas, did not deem it advisable to make the concession for building the road to a company of citizens of the United States, and answered that, as a grant was already in the hands of the Garay company, the government had no right to dispose of the same.

This answer given by the Mexican plenipotentiaries who signed the treaty of Guadalupe Hidalgo induced the parties in the United States, interested in building the Tehauantepec railroad, to obtain the cession of the Garay charter from Messrs. Manning and Mackintosh, who, in their turn, considering themselves the successors of Sr. Garay, were willing to and did sell their charter to a United States company, who asked the guarantee of the United States government to build the road.

This government requested Mexico to make a treaty for that purpose, and notwithstanding the reluctance of Mexico on this point, at the request of the United States the Mexican plenipotentiary signed on June 23, 1850, a treaty with Mr. Robert P. Letcher, the minister from this country at the City of Mexico, by which both governments guaranteed the neutrality of the isthmus, under certain conditions that were considered sufficient to assure the autonomy and independence of

Mexico; but the treaty was rejected by the United States senate, and the United States government asked for a modification of the same, and this request resulted in another treaty, signed January 25, 1851, which was rejected in its turn by the Mexican senate.

The principal cause of the rejection of this treaty was that the government of the United States contended that it guaranteed the Garay charter, which, as already stated, had fallen into the hands of United States citizens, while the Mexican government, far from accepting that view of the case, declared the said concession forfeited, and considered that it would be extremely dangerous for Mexican interests should that road be built by citizens of the United States.

The feeling of distrust against the United States which prevailed in Mexico immediately after the war of 1846 and 1847 was strengthened by reason of some filibustering invasions of the border states of Mexico, which occurred about that time, and which the United States government could not prevent. As the people of Mexico did not understand well the laws of the United States, the extent of personal guarantees enjoyed here, and the feeble action of the federal government in the States, it was hardly believed that this government had no power to prevent such invasions.

It is very satisfactory to notice the change in the relations between Mexico and the United States since 1851. The Mexican government at that period not only refused to grant to citizens of the United States a concession to build a railway, but considered it dangerous for engineers from that country to finish the survey which they were making of the isthmus of Tehuantepec. Now, however, almost all the railway concessions given by the Mexican government—and their number is considerable—have been made to citizens of the United States. The principal railways in Mexico, with only two exceptions—those running from Vera Cruz to the City of Mexico—have been built by companies organized in the United States. The idea of permitting the passage of United States troops into Mexican territory in pursuit of hostile Indians was then considered as inacceptable; indeed, according to a statement of Mr. Letcher, the American minister, made to Señor Don Fernando Ramirez, the secretary of foreign affairs of the Mexican government, United States soldiers then appeared to be more objectionable in Mexico than hostile Indians. Since then, however, that permission has been freely granted and with satisfactory results. This shows that the situation of distrust and even unfriendliness resulting from the war of 1846-47 has given place now to one of mutual friendship and cordiality, as a consequence principally of the change in the political tendencies of the parties in the United States which, since the abolition of slavery, do not seek to annex Mexican territory.

In view of the determination of the Mexican government not to recognize the charter for the building of the road which had come to the hands of a company of citizens of the United States, parties interested in the isthmus transit applied to the government of New Granada, and received from the latter a liberal concession for the construction of a railroad across the isthmus of Panama. The construction of that road was begun on April 18, 1850, and ended on January 20, 1855. The building of the Panama road made unnecessary, for the time being, the construction of the Tehuantepec road, and this circumstance, in my opinion, more than anything else, has been in the way of building the Tehuantepec road.

The agitation produced by the treaties negotiated with the United States about Tehuantepec, and the efforts of the parties to whom the Garay grant had been transferred to have it recognized by Mexico gave rise to a long and bitter discussion, with the result that the Mexican congress, on May 22, 1851, declared forfeited the charter granted to Don José de Garay on the ground that its conditions had not been fulfilled and that the last extension granted was not legal, as has been stated before.

But the Mexican congress, awake to the necessity of opening a means of communication, approved an act on May 14, 1852, requesting the executive to promote the organization of a company to undertake the building of the Tehuantepec road, on the basis therein set forth. Pursuant to that decree the executive branch of the government published, on July 29 of the same year, a notice inviting bids for the building of the road, and, after considering those that were presented, a contract was signed with Mr. A. G. Sloo and others, by which it was agreed that within a year from the date of the contract a plank road should be commenced, to be ended three years afterwards, and then succeeded by a railroad, which should be completed within the following four years. This contract was approved, with some amendments, by an act of the Mexican congress of February 5, 1853.

The same act of May 14, 1852, provided that negotiations with friendly powers should be opened, with a view to make treaties which should recognize the neutrality of the passage through the isthmus, in case of war; and by virtue of that provision a treaty was signed at the City of Mexico on March 21, 1853, between the Mexican plenipotentiaries and the United States minister, in which permission was granted to the United States government to guarantee the neutrality of the isthmus with armed force, when requested by the Mexican government, and for the free passage of United States troops from one coast to the other. Special guarantees were given in the treaty to the contract with Mr. A. G. Sloo and company; but, for the reasons already pointed out, the treaty was rejected by the Mexican congress, and in consequence of this fact, and on account of the construction of the Panama railroad having been commenced, the Sloo company could not fulfil their contract, and a decree of the President of Mexico, dated September 3, 1857, was issued declaring the forfeiture of the Sloo grant, for non-compliance with its provisions.

On September 7, 1857, the administration of General Comonfort, acting under extraordinary powers, granted to the Louisiana Tehuantepec Company, organized in New Orleans on July 30 preceding, a charter for the construction of the Tehuantepec route, making use of the Coatzacoalcos river as far as it could be made navigable, and the rest of the distance to be covered by rail. Work was to begin within eighteen months after the date of the decree, the railway was to be built at the rate of ten Mexican leagues (about twenty-six miles) per year, and a carriage-road was to be opened at once. The latter was partially opened, and in this way a stage-coach line was established in 1858 and 1859, in connection with ships running between New Orleans and Minatitlan and between Ventosa and San Francisco, but passengers had to travel a short distance by horseback before reaching El Zuchil. The company agreed to pay Francisco P. Falconet $600,000 and interest, which had been deposited by the Sloo company with the Mexican government in accordance with Article IV. of their contract, and therefore the Louisiana company was in fact the successor of the Sloo company.

The grant of September 7, 1857, was liberally modified and amplified by another decree issued at Vera Cruz by President Juarez on March 28, 1859, and the extension of time then granted was again extended by another decree, issued also at Vera Cruz on October 25, 1860. But notwithstanding these liberal grants the Louisiana Tehuantepec Company could not even begin to build the road, and a decree issued at the City of Chihuahua by President Juarez on October 15, 1866, declared the forfeiture of the concession made to the Louisiana Tehuantepec Company, owing to the non-fulfillment of its obligations, and granted it to the "Tehuantepec Transit Company," which also failed to fulfill its obligations, after which the charter was forfeited by a decree of August 26, 1867, issued at the City of Mexico.

The war of reform on the one hand, which lasted from 1857 to 1860, and the French intervention on the other, from 1861 to 1867, as well as the bad financial situation of the world, had prevented the building of the road, notwithstanding the several concessions successively made by the Mexican government; but it was believed that with peace restored to Mexico the principal drawbacks had disappeared, and on October 6, 1867, a concession was granted—also by virtue of extraordinary powers vested by congress in the president—to Emile La Sere, a native of New Orleans, or to a company that he might organize. This concession was modified by an act of the Mexican congress of January 2, 1869, which considerably amplified the privileges granted to Mr. La Sere or his company, and extended the time fixed for the completion of the work.

Another act of the Mexican congress, of December 14, 1870, renewed and extended the time agreed upon in that concession, to begin and finish the work, though the name of Emile La Sere was then omitted, and also authorized the company to construct a canal from the Gulf of Mexico to the Pacific. The time fixed to commence the work of construction expired on February 2, 1871, but on the 9th the United States steamer *Nipsic* arrived at Minatitlan, carrying on board the engineers sent by the company under chief engineer I. J. Williams, and work was begun on that day. The Mexican government decided on January 24, 1871, that the work had been commenced within the time allowed, as the steamer had been delayed by stress of weather, for which the company was not responsible. An act passed by the Mexican congress on May 22, 1872, renewed the concessions of January 2, 1869, and December 14, 1870, and provided that the time for building the road should be counted from January 2, 1872.

A further act of the Mexican congress of January 15, 1874, extended for one year the time fixed in the grants of January 2, 1869, and December 14, 1870, to build the railroad and the canal at Tehuantepec. Another act of the Mexican congress of December 14, 1874, extended again for three and four years, respectively, the time agreed upon in the two above mentioned acts, and granted besides to the Tehuantepec Co. a subsidy of $7500 for each kilometer of road built. As the time, so often renewed, expired without any portion of the road being built, the Mexican government declared on May 31, 1879, the La Sere Tehuantepec grant to have been ended.

On January 19, 1878, a contract was signed at the City of Mexico, between the Secretary of Public Works and Mr. Hayden H. Hall, representing Mr. Edward Learned of New York city, for the construction of an interoceanic road at Tehuantepec, and on October 31, 1878, the contract was amended by common consent and submitted to congress for its approval, and was approved by an act of the Mexican congress of June 2, 1879, which gave a charter to Edward Learned, a citizen of the United States, or to the company that he might organize, to build the Tehuantepec road within three years and four months from the date of the charter, and granted a subsidy of $7500 for each kilometer of road built by the company and approved by the Mexican government.

This act was amended by another act of the Mexican congress of November 6, 1880, which authorized the Learned Company to build the road from the Coatzacoalcos river to Lake Superior (Laguna Superior) or over it or around it, as the survey should show to be more convenient.

It appears from official reports made to the Mexican government that the Learned Co. had completed in the year 1881, as follows: on February 17, 1881, five kilometers of road, on May 15, seven kilometers, on August 7, fifteen kilometers, and that the company had only thirty-five kilometers built when the grant was terminated.

On August 16, 1882, the Mexican government declared the forfeiture of the Learned grant, for non-compliance with its provisions, and on December 20, 1882, Mr. George Tyng, representative of the Learned Co., signed a contract with the Secretary of Public Works at the City of Mexico, by which he conveyed to the Mexican government all the property, rights and materials of the Tehuantepec railway in consideration of $125,000, paid at once in Mexican silver dollars, and $1,500,000 payable in New York city in United States gold in installments, which was paid by me to Mr. William A. Booth, president of the company.

The fact that so many liberal grants had been made to various companies, and that none of them had been able to build the road, which was supposed to be a very profitable undertaking, made some believe that the Panama Railway Co. was at the bottom of the difficulty, and although this suspicion was in my opinion entirely groundless, and not shared by the government, it very likely contributed to decide public opinion to favor the idea that the government should undertake the work on its own account. Congress, therefore, authorized the executive on May 30, 1882, to undertake the construction, by the nation, of the Tehuantepec railway, or to contract for its construction with a company.

On June 30, 1882, the Mexican government appointed Don Delfin Sanchez, a gentleman who had some experience as a railroad builder in Mexico, for the purpose of buying all the material for the road, and soon afterward he was furnished with $600,000 to pay for the material to be ordered.

On October 5, 1882, a contract was signed by the Mexican government with Sr. Sanchez, as contractor for the construction of the road, on the basis of receiving $25,000 for each kilometer of road built, the road to be finished on February 28, 1885, and on the 11th of that month Sr. Sanchez acknowledged to have received from the Mexican government $701,000, on account of the contract; but the road was not built, and on April 25, 1888, the construction contract was abrogated, the Mexican government agreeing to pay Sr. Sanchez $562,910.50 as the value of the material and work done, and $170,224.90 representing the profits which ought to have accrued to the contractor if the work had been done.

By an act of December 14, 1878, the legislature of the state of Oaxaca authorized its governor to contract with the Federal government for the construction of the Tehuantepec railroad, in conjunction with the State of Vera Cruz or singly; and the legislature of Vera Cruz approved a similar act, as the isthmus of Tehuantepec occupies territory belonging to both states, but no action was taken under said acts.

By virtue of the authority conferred on the Mexican government by the act of congress of May 30, 1882, the President authorized the issue in London, Berlin and Amsterdam, of a loan of £2,700,000, with 5 per cent. interest secured by the mortgage of the road. The bonds were sold to a syndicate of bankers at about 70 per cent., and on August 28, 1888, a contract was signed at the City of Mexico with the representative of Mr. Edward McMurdo, of London, for the construction of 226 kilometers of the Tehuantepec road and the repair of 108 kilometers which had been badly built, the work to be finished within thirty months, and the whole proceeds of the loan were placed at the contractor's disposal.

This contract was altered in some details by another contract signed at the City of Mexico on October 15, 1888, which was approved by an act of the Mexican congress of December 19, 1888.

Mr. McMurdo died in London before he could carry out his contracts, and his widow agreed with the Mexican government on January 13, 1892, to abrogate the contract under certain conditions specified therein and which were mutually accepted.

Congress again authorized the executive, by an act of December 18, 1891, to contract the construction of the road, and on February 27, 1892, a contract was signed at the City of Mexico with Messrs. Chandos S. Stanhope, an English subject, J. M. Hampson and E. L. Corthell, citizens of the United States, in which they agreed to finish the work in fifteen months from the date of its commencement, and one additional month from the date of the contract was allowed to begin the work, and to secure the fulfillment of the contract the Mexican government placed at the disposal of the contractors $2,000,000, the balance of the proceeds of the £2,700,000 loan negotiated in Europe.

As the net proceeds of that loan were not sufficient to finish the road, the contract of February 27, 1892, was abrogated, and soon afterwards a portion of another loan of £3,000,000 contracted at the City of Mexico, in November, 1893, was appropriated to that work, and on December 6, 1893, a further contract was signed at that city, with Mr. Chandos S. Stanhope, for the construction of the fifty-nine kilometers of road unbuilt, which provided that the line shall be finished on September 6th of this year, with an additional expense of $1,113,035, and it is to be hoped that this last contract will be faithfully carried into effect, and that the road will be finished during the present year.

This account would not be complete if I failed to mention that the distinguished engineer, James B. Eads, conceived a project for building a railway capable of transporting ships from one ocean to the other, across the isthmus of Tehuantepec; and to that end he made, on April 26, 1881, a contract with the Mexican government, which was ratified by act of the Federal congress of May 28th of that year, and that charter was modified and amplified by another contract signed at the City of Mexico with the representative of Captain Eads on May 2, 1885, which was also approved by the Mexican congress with certain alterations on December 15, 1885. In the first of these contracts it was stipulated that the work should be finished within twelve years from May 6, 1881, and that time was extended two years by the second contract. The Mexican government promised to pay the company as a guarantee, $18,750,000 at the rate of $1,250,000 a year, to be eventually refunded if the profits of the railway should exceed $3,750,000 per year, and in that case the sixth of that excess would be applied to the payment of the subsidy. The company was authorized to build a canal from Laguna Superior to the Pacific ocean, and it was further granted a subsidy of 168 square kilometers of land for every foot in depth of said canal. It was also granted 4200 square kilometers of land if it should deepen the Coatzacoalcos river to 25 feet.

Unfortunately, the extraordinary character of the project and the other difficulties to which I have alluded have not permitted the construction of this great work, but as a similar road is on the point of being completed on the isthmus of Chignecto, which connects the peninsula of Nova Scotia with the mainland in Canada, and will show the practicability of the work, it is likely that this fact will pave the way to the construction of a similar railway across the isthmus of Tehuantepec. The Chignecto ship-railway, which will connect the navigation of the Bay of Fundy with the Gulf of Saint Lawrence, is 17 miles in length and capable of carrying ships weighing 2000 tons. About three-fourths have already been built.

The grants above mentioned have led to the making of surveys of Tehuantepec several times. Besides the one made by Señor Moro, a United States Company in 1850 sent Major J. G. Barnard, U. S. A., as chief of engineers, to make a survey of the Tehuantepec isthmus, and although the condition of affairs which I have tried to sketch compelled the Mexican government to order the suspension of the survey, it had already been finished when Major Barnard was notified to leave the work, and its results were subsequently published.

In 1870, during the administration of General Grant, another and more complete and important survey was made, as he wished to ascertain which of the three American isthmuses was the most desirable for the construction of an interoceanic canal. He also appointed a commission of able engineers, which decided in favor of the route through Nicaragua. The surveying expedition sent to Tehuantepec under Capt. Shufeldt was accompanied by a corps of Mexican engineers, appointed by the Mexican government, under the lead of Señor Don Manuel Fernandez Leal, an eminent engineer, who holds now the position of Secretary of Public Works. The Mexican commission made a thorough survey and its reports and maps were published in Volume III. of the Annals of the Department of Public Works of the Mexican Republic. The concession made to Captain Eads caused a more elaborate survey to be made, not only of the railway, but also of the terminal points of the road.

The Mexican government sent a delegate, Señor Don Francisco de Garay, to present the advantages of Tehuantepec at the International Congress on American Interoceanic Communications convened in 1879, at Paris, at the suggestion of M. Ferdinand de Lesseps, but he could hardly be heard because M. de Lesseps had decided in favor of Panama before the meeting of the conference, without taking into consideration the difficulties to be encountered. As M. de Lesseps was the promoter of the congress, it was composed largely of his friends, and he obtained a vote for Panama of 74 members, while only 14 voted against him and 7 refrained from voting. The Mexican delegate voted against Panama. Those who did not vote, and who represented that the matter had not been sufficiently discussed and that a majority of the members were not competent to decide the difficult technical questions, were Admiral Ammen and Señor Menocal, delegates from the United States, Señor Don Manuel M. de Peralta, delegate from Costa Rica, and now minister from that country to Washington, Señor Ordonez, delegate from Colombia, and others. M. La Valley, the distinguished French engineer who built the Suez canal, and who was a friend of M. de Lesseps, did not vote for Panama.

After so many efforts resulting in failure, the Tehuantepec road is now practically completed, and Mexico offers the result of all this work of many years, and great expense, to the commercial interests of the world.

The comparative advantages of the Tehuantepec interoceanic route over the Panama route, in reference to geographical and commercial features, are great. Any map showing the two routes will prove in a general way the geographical advantages of the Tehuantepec route in reference to the coastwise commerce of the United States, and in a measure, its advantages in relation to the business of western Europe. Admiral, then Captain, Shufeldt, of the navy of the United States, in an official report made in 1871, thus forcibly expressed the commercial advantages of Tehuantepec: "Each isthmus rises into importance as it lies nearer to the center of American (United States) commercial interests." Other things being equal, the route which has the greatest advantages will lie nearest to what may be considered the axial line of the world's commerce, which may be drawn on the globe between Hongkong and Yokohama on the Asiatic coast, across the Pacific ocean, through San Francisco, across the United States to New York, and across the Atlantic to Liverpool or Havre. Tehuantepec, of all the interoceanic routes, lies nearest to this "axial line." In a direct line the distance is 1200 miles between Tehuantepec and Panama, or about as far as from New York to New Orleans.

Examination of a globe will show that the shortest sail or steamer route from eastern Asia to any point on the Pacific coast of the American isthmus passes in close proximity to the shore line of Tehuantepec ; in fact the shortest great circle from Panama to Hongkong will pass through Tehuantepec, east of San Francisco, and nearly up to the Aleutian islands. Even the shortest route from Panama to the Hawaiian islands will pass close to Tehuantepec. It will at once be apparent, therefore, that it will require almost a doubling of the above-mentioned distance to cross the isthmus at Panama, particularly for all traffic of the Pacific ocean seeking gulf ports. In a lesser degree the distance by way of Panama to all Atlantic ports of the United States and Eastern Europe will be largely increased over the Tehuantepec distance.

The following table of distance in statute miles between several ports has been compiled at the Hydrographic Office, Bureau of Navigation, of the Navy Department of the United States:

TERMINAL POINTS.	Via Tehuantepec Railroad.	Via Nicaragua Canal.	Via Panama Railroad.
New York to San Francisco	4,925	5,651	6,107
New York to Puget Sound	5,647	6,524	6,855
New York to Sitka	6,347	7,113	7,555
New York to Bering Strait	7,788	8,524	9,101
New York to Acapulco	2,722	3,507	3,988
New York to Mazatlan	3,476	4,232	4,675
New York to Hongkong	11,597	12,313	12,645
New York to Yokohama	9,984	10,626	11,211
New York to Melbourne	11,068	11,357	11,471
New York to Auckland	9,345	9,745	9,813
New York to Honolulu	6,566	7,390	7,705
New York to Callao	4,661	4,312	3,873
New York to Guayaquil	4,141	3,774	3,303
New York to Valparaiso	6,370	5,774	5,337
New Orleans to San Francisco	3,561	4,776	5,415
New Orleans to Acapulco	1,454	2,631	3,296
New Orleans to Mazatlan	2,027	3,357	3,983
New Orleans to Callao	3,393	3,436	3,181
New Orleans to Valparaiso	5,040	4,899	4,644
Liverpool to San Francisco	8,274	8,783	9,071
Liverpool to Acapulco	6,076	6,639	6,952
Liverpool to Mazatlan	6,714	7,364	7,640
Liverpool to Auckland	12,584	12,877	12,777
Liverpool to Guayaquil	7,379	6,848	6,267
Liverpool to Callao	7,899	7,444	6,837
Liverpool to Valparaiso	9,356	8,906	8,301
Liverpool to Honolulu	9,805	10,522	10,670
Liverpool to Yokohama	13,223	13,758	14,175
Liverpool to Melbourne	14,113	14,499	14,435

If a comparison is made with Tehuantepec on sixteen of the main routes of commerce between the east and the west, the total saving by Tehuantepec is over 125,000 miles. It will also be seen that the question of comparative distance also affects to an important degree the entire interior of the United States, particularly the Mississippi valley. It is only a little over 810 miles from the mouth of the Mississippi river to the eastern terminus of the Tehuantepec railroad. The total distance by rail and water from Chicago to the Pacific ocean via Tehuantepec is only 1875 miles.

The nautical conditions for sailing vessels are much more favorable at Tehuantepec than at Panama. Navigators always avoid, if possible, the region of calms on both sides of the Panama isthmus. These calms extend well into the Pacific ocean at Panama. Lieutenant Maury and Captain Bent, both acknowledged nautical experts, are my authority for this statement.

This advantage may be considered by some as of little importance on account of what is supposed to be the rapid substitution of steam for sail, but, as far as the United States is concerned, the advantages of good nautical conditions are important, and will be for many years, as their sailing tonnage greatly predominates over steam. From the above statement it is apparent that an interoceanic route established at Tehuantepec will connect, at the best possible location, the eastern and western coasts of the United States and Mexico, and will develop a coastwise business of great magnitude and of vast importance to both countries.

The climatic conditions are more favorable at Tehuantepec than at Panama. The northeast trade-winds from the United States cross the Gulf of Mexico, making the climate of Tehuantepec healthful. I was born and for many years lived at the city of Oaxaca, the capital of the state to which Tehuantepec belongs, and have been several times in Tehuantepec, although I never resided there, and I can assert by personal knowledge that it has a healthy climate, taking in consideration its latitude and altitude.

General Porfino Diaz, who has been the president of Mexico since 1877, with an interval of four years, is a native of the city of Oaxaca, and he spent in Tehuantepec two of the most eventful years of his life—1858 and 1859— as civil and military governor of that district, and has had great interest in building that road. To his exertions is due the fact that that work is now nearing completion. It is to be hoped that its results will be beneficial to the commerce of the world, and this will be a compensation for the many efforts, disappointments, and great expense made, suffered, and borne by Mexico in carrying out this great work of public improvement.

M. ROMERO.

Washington, March 10, 1894.

13

California. Committee of fifty

The Central Pacific R. R. Debt.

CALIFORNIA'S REMONSTRANCE AGAINST REFUNDING IT.

CALIFORNIA STATE LIBRARY

INDEX.

PAGE
Reversal of established congressional policy as to Pacific roads.... 1
False pretences to Congress—Concealment of material facts....... 2
The California railroad combine—How composed—Its continuity—The Southern Pacific Company.............................. 4
Irresponsibility of the Company—What property it owns....4 and 5
The railroad situation in 1870—Commencement of the Southern Pacific road.. 6
The great fraud on the Central road by which it was made to furnish means to build the Southern.......................... 7
Other frauds in Central Pacific management.................. 10
The secret dividends of 1895–1896, and how brought about........ 11
Proofs of the foregoing, viz: Editorial of the "*Economist*" (London), March 23d, 1895.................................... 12
Mr. Huntington's reply—Confessing—From "*Economist*" (London), April 20th, 1895.................................... 12
Mr. Crocker's confession.................................. 14
Other assets of the Central Pacific Company.................. 15
Other objections to the pending bill creating a federal corporation of unlimited powers, in violation of the rights of the State and the courtesy due to it from the general government........... 16
Instances of gross abuses in transportation which have rendered the Central Pacific management odious and detested.......... 17
Imposition of prohibitory duties on Eastern goods imported into California.................................... 17
Establishment of an illegal special contract system with barbarous penalties.................................... 17
Collusive suits and vexatious litigations with the State over a system of taxation adopted at their own suggestion—Deceptions practised on the courts, etc................................ 17
Defrauding the government and the public by failure to build the road contracted for—The contracts entire.................. 19
The Central Pacific can be reorganized on safe and solvent basis by calling in the sums due it from solvent debtors............... 21
Resumé of grounds of opposition to Refunding Bill.............. 22
Appendix—Article from "*Nation*," August 11th, 1881............ 25
Article from "*Nation*," December 5th, 1881................ 28

THE CENTRAL PACIFIC R. R. DEBT.

CALIFORNIA'S REMONSTRANCE

AGAINST REFUNDING IT.

To the Senate and House of Representatives
of the United States:

GENTLEMEN:—In again appearing in opposition to the passage by Congress of a measure for refunding or extending time on the debt of the Central Pacific Company, we beg to call to your recollection the many objections expressed in our memorial on behalf of the people of this State presented to the last session of Congress as well as to the following additional facts and considerations, some of which have been developed since that memorial was presented and others have been suggested by the course the discussion of the proposal has taken.

Reversal of Established Congressional Policy as to Pacific Roads.

I. In granting aid to the Texas Pacific road and to the Southern Pacific Railroad it was undoubtedly the intention of Congress to create a southern route across the continent which would constitute a rival to the central route, on that side, as the Northern Pacific road was designed to do on the North. The purpose was to give to the people of the whole country the advantage of competition in overland transportation. Without accurate knowledge of the extent to which extortion in charges was practised on the Central line (since brought to light by the Pacific Railroad Commission), it was common knowledge that the charges were excessively high, and the creation and maintenance of competing roads were recognized as necessary. Therefore to insure their construction and maintenance aid was liberally granted by Congress. Independent of its enormous subvention in bonds, the Central Pacific Company received as a donation of land aggregating, after all deductions, 8,000,000 acres, worth at minimum government price, $20,000,000, but estimated at more by themselves; their sales down to December 31st, 1882, having produced an average price of $4.85 per acre. (Vid. Report of December, 1882, pp. 57, 59.) The Southern Pacific land grant in California amounted to 10,445,227 acres, worth at minimum government price $26,113,175, but of which their own report of December 31st, 1882, says "a very large portion of them is choice agricultural and timber land and will command a much higher price." In fact the subsequent table in same report shows the average price so far to have been $4.38 per acre. (An. report December 31st, 1882, pp. 43, 44, 51.) This beneficent and well considered policy of Congress in pursuit of which it has so bountifully endowed these two companies has been deliberately and formally set at naught by the managers, who to prevent the competition designed by Congress, have leased the Central Pacific road for *ninety-nine years*, from April 1st, 1885, to the owners of the whole stock of the Southern Pacific Railroad, and both roads are thus put into common management. The proposed refunding act distinctly confirms this lease, so far as Congress has the power to do so, and threatens penalties against the abused stockholders of the company should they seek to avoid it as a fraud on them! The chief objection to it on our part is its direct hostility to the deliberate and beneficial policy of Congress, which it distinctly reverses in the interest of private parties; a minor one, not however without weight is that it aims to fasten on the stockholders of the company a lease by their trustees in fraud of their rights, which they are now preparing to vindicate, by legal proceedings. This is unjust to them. The method by which the Central Pacific managers retained control of the company after parting with all their interest will be shown further on; what is important here is that the real parties in interest have at last awakened to the wrong done them, and are preparing to claim their rights, and return to the policy of an independent existence and operation designed by Congress; and this is the moment at which it is proposed to enact, as in Section 19 of the pending bill, S. B. No. 2894, 54th Congress, 1st Session, *that if this fraudulent and infamous lease be annulled or cancelled*, even by decree of a Court, that act shall entail the immediate maturity of the whole debt due the United States at the option of the President! The government is thus made to cast the sword and belt of Brennus into the scale wherein the defrauded stockholders are weighing the cost of obtaining justice against their dishonest trustees! Surely Congress will shrink from enacting a law to forbid people who have been defrauded from seeking redress under such a heavy penalty!

False Pretences to Congress—Concealment of Material Facts.

II. The indulgence and extension of time here involved are asked under false pretences the disengenuousness of which should forbid entertaining the proposal. The demand for time to pay is based on the suggestion of poverty on the part of the debtor, whose earning power it is said cannot reach beyond the pittance proposed to be required by the pending bill, but the pretense of poverty is entirely false. The Central Pacific Railroad Company is paying dividends to its shareholders to-day, *with promise to double them as soon as the bill passes*, and it has very large means, money claims, which should be called in and applied to the payment of its debts. Some of these are as follows:

I. Claims against its former directors and managers amounting to many millions, for misappropriation of its funds and property by means of fraudulent contracts and dealings with themselves through the disguise of construction companies; the Contract and Finance Company, the Western Development Company, etc.

II. Claims of great magnitude against the Southern Pacific Railroad Company, its successful rival in business, to be explained below.

III. Claims against its directors for fraudulent mismanagement whereby its revenues have been impaired for their own benefit.

Of these claims in their order. The proof of the dividends paid, afterwards.

1. Claims against its directors for misappropriation of funds, etc. The report of the Pacific Railroad Commission shows that the assets and resources of the Central Pacific Railroad Company were diverted and appropriated to their own private gain and in fraud of the company by the original directors, Huntington, Stanford, Crocker and Hopkins, through the instrumentality of construction companies and gives approximately the amount stolen. These proceedings are now in their outline familiar to all well informed persons, and altogether the frauds practised in the construction of the Pacific railroads are generally regarded as the most disgraceful public scandal in the annals of the country. No public man has ever dared to defend them, though several were shown to have profited by them, and were relegated by public opinion to merited obscurity; they have never received even tacit condonation from Congress, and to pardon them now, by extending the time for payment, as if the liability were an ordinary debt, would be to affirm by act of Congress that in the judgment of that body the acts in question came up to the standard of morals properly applicable to the disbursement of public funds, intrusted, in a moment of great public peril, to the honor of private citizens. Better by far lose the whole amount of the debt than affirm such doctrine. But the debt need not be lost; every dollar of profit gained by these dishonest directors can be yet recovered by the company or by a receiver appointed in a foreclosure representing the interests of creditors and stockholders. The company has never brought such suit because its management has ever been controlled by the perpetrators of the frauds or those deriving from them. Individual stockholders have from time to time sued on behalf of the corporation, but though vigorously defended not one of them has been allowed to proceed to judgmeut. They have all been compromised for amounts and on terms which implicitely admit guilt. "*The allegations*," say the friendly majority of the Pacific railroad commission in their report (page 75) "*contained in these complaints were such as would* "*compel men of honor, if those allegations were false, to defend themselves* "*at any cost. It appears from the evidence that all these suits were* "*settled, and that the stocks owned by the plaintiffs were bought at rates* "*varying from $400.00 a share to $1,000.00 a share.*" None of these settlements however condone the wrongs done the company, and no statute of limitation has barred its right. That right is an asset of great value, for the responsibility of Mr. Huntington, individually, and of the Crocker estate, are undoubted. The latter has been fortunately kept undivided by transfer to a corporation composed of the heirs, and is distinctly recognisable in present hands.

II. and III. Claims against the Southern Pacific Railroad Company, and Claims against its own directors for fraudulent mismanagement of its business. These for brevity will be treated together, but to do so requires some preliminary explanations.

The California Railroad Combine—How Composed—Its Continuity—The Southern Pacific Company.

It must then be premised that the management of the Central Pacific road has been substantially unchanged from its organization to the present day. When the *personnel* has varied the transfer has been from brother to brother, from father to son, from uncle to nephew, or from deceased to surviving partners. There has been an absolute continuity of design, system, policy, methods and practices from the beginning so that we may speak of the management at all times as continuous. The form of the combine remained unchanged down to 1884, when it took a corporate shape, as to the "Southern Pacific Company."

The original Central Pacific combination consisted of Collis P. Huntington, Leland Stanford, Mark Hopkins, Charles Crocker and E. B. Crocker. They undertook the building and financing of the Central Pacific road and shared the profits equally. Whether they were technically partners is disputed and not here material. The last named associate died first, and as was natural the survivors bought up his interest. Mark Hopkins died next, intestate and childless; his widow retained his interest and took his place. The others were now growing old and to husband their energies the survivors sought a younger associate to share their labors. They sold an interest of one-fifth to David D. Colton and took him in. By this time they had branched out into extensions of the Central Pacific road, northward up the Sacramento Valley, and southward through that of the San Joaquin, and building the Southern Pacific road. Colton was very active in the management. He died however, quite suddenly from an accident, and as he had not been long enough in the concern to become an essential part of it; and left no representative who could contribute the services that he had rendered, it became necessary to buy his interest. This was done, quite promptly, but in a manner and under circumstances, that led to a subsequent action by Mrs. Colton to set aside the sale, and have an account taken of the affairs of the concern. In the course of this trial, which was contested with great obstinacy, was brought to light the correspondence between Huntington and his associates which has since become so famous (or infamous). It forms a part of the transcript on appeal.

The Colton incident drew the attention of the surviving parties to the danger that menaced them, as their numbers continued to grow less. If each successive death were to involve a purchase of the deceased's interest by the survivors, what would be the lot of the longest liver? Mr. Huntington is credited with the invention of the idea of obtaining a charter of incorporation for themselves; surrendering to such corporation the shares of stock held by the individuals in the various railroad companies they had formed, and taking, in exchange for it, stock in the new company. This plan was adopted, and a legislative charter was obtained from the State of Kentucky for the Southern Pacific Company. The original proposal was to have the stock of the new company held equally by the four remaining associates, viz: one-quarter each by Stanford, Crocker, Huntington and Mrs. Hopkins; but at the last moment Mr. Huntington recurred to the annoyance they had previously experienced from their inability to deny that the Southern Pacific and Central Pacific Companies were in fact composed of the same individuals (referred to in his letters to Colton), and suggested taking in an additional associate, and selling him a small interest. This was acceded to and a fifth shareholder taken in; but he presently tired of his purchase and sold his shares to Huntington, or fell under his control, and thus it came about that Mr. Huntington united with *any one* of the other parties controls the action of the Southern Pacific Company. Mrs. Hopkins having remarried in her old age, on her death left a will in favor of her youthful husband, a Mr. Searles. This gentleman, having other tastes, has not taken personal part in the railroad management, and thus Mr. Huntington, by his acquiescent coöperation, has come to wield the whole power of the Southern Pacific Company, and his single will reverses the deliberate policy of Congress in pursuance of which it has granted away over a hundred million acres of the public domain, 10,445,227 thereof to the Southern Pacific Railroad Company of which he then was and practically still remains the controlling owner. Being a Kentucky corporation, the Southern Pacific Company organization is not governed by the laws of this State wherein its business lies, and the proportional representation of stockholders in the direction allowed by California law has no place. The other parties in interest are therefore indebted to the consideration of Mr. Huntington for their positions in the board, and must dance to such music as he sees fit to play. He is the president of the company, and is no "*King Log!*" He controls everything, and is to all intents and purposes the company.

What Property The Southern Pacific Company Owns.

It never had any cash capital. The stocks held by the organizers were transferred to it, at some agreed prices, bearing no relation to their actual value and its stock issued in payment therefor. Thus it owns the stocks of all the other railroad and transportation companies which its managers have from time to time built or purchased, except the Central Pacific, and nothing more. A few shares of each are placed in the names of dummies in their employ, or under their control, to qualify them as directors of the various companies, and thus the doings of these corporations are dictated and controlled by the single will which controls the Southern Pacific Company. As every road whereof it owns the stock is mortgaged for far beyond its value or cost, the value of the stocks which constitute its whole capital is obviously but nominal. Whenever additional property is acquired, it is at once duly mortgaged for all it will possibly bear, and subject to such mortgage transferred to or held by the Southern Pacific Company.

The Southern Pacific Company chooses the directors and controls the management of all these roads of which it is the *lessee* besides owning the stock. It finances them all, gets all their cash into a common purse, manages their sinking funds, lending the money of one to the other, and that of the other to a third, and so round the circle till it comes back to where it started, and the whole thing becomes a mere matter of book-keeping, needing no unnecessary and inconvenient payments of cash. The lease of the various roads other than the Central Pacific is styled the "*Omnibus Lease.*" It has been lauded as a method of insuring unity and economy of management, etc. The principal feature however, which a studious reader will be apt to recognize in it, is a clause, which reversing the old rule or reserving a rent to be paid by the lessee to the lessor, provides that *the lessees shall have ten per cent of the procedes of the business for managing and taking care of the property of the company whereof they own the whole stock!* While the lessees continue to own all the stock, this may be harmless;

but whenever they shall put any of those stocks on the market and succeed in making sales of them, the purchasers may be expected to discover its radical dishonesty when they find a portion of the stockholders in their capacity of lessees, absorbing ten per cent of the proceeds of the business before leaving a cent for them.

Members of Congress should also be informed that the Pacific Improvement Company (commonly written P. I. Co.) is another of the Protean corporate forms under which these railroad managers mask their operations, just as the Western Development Company was before it, and the Contract and Finance Company before it in turn; continually changing in name, ever the same in fact.

Returning from this necessary introduction of the characters we come to the gigantic fraud on the Central Pacific Company, perpetrated by its managers in 1880. It consisted essentially in *using the credit and means of that company to build, for their own benefit, the Southern Pacific road as a rival line*, designed and calculated to destroy the value of the Central! The process of this was as follows:

The Situation in 1870. Commencement of the S. P. Road.

What is now called the Southern Pacific Railroad began with the construction of a road from San Francisco, 80 miles south to Gilroy. It was completed in 1869. Mr. Huntington intimates—in fact asserts—that it was done by his Southern Pacific Railroad Company; but this is one of those curious lapses of memory, to which some persons are subject, by which they not only forget what occurred, but remember exactly what did not! The fact is neither he nor any company he was connected with built a single mile of it. It was built by Peter Donahue, Henry M. Newhall and Charles B. Polhemus, (the last named is still living) under the corporate name of the San Francisco and San Jose Railroad Company, and that of the Santa Clara and Pajaro Valley Railroad Company; to build and equip it cost about $1,300,000 and it was in use as a local road. In 1865 a ompany was organized in San Francisco, by eight or ten gentlemen,—William T. Coleman, Timothy Guy Phelps, Charles N. Fox and others, under the name of "The Southern Pacific Railroad Company," but it had no actual capital, and built no road; was in fact a mere paper organization. There was another company organized in 1870 called the California Southern Railroad Company, which was in similar plight. By this time some progress had been made in selling the shares of the Central Pacific Company, though Mr. Huntington and his associates continued to retain its management. They decided on building another road which by its more advantageous location, more favorable grades, and preferable approach to the city of San Francisco direct, would be able to successfully rival it in business. With this view they purchased from Messrs. Newhall, Donahue and Polhemus, the stock of the two roads first above mentioned (from San Francisco to Gilroy) and from the organizers of the second two companies named, their good will and corporate names, and in October 1870, consolidated the four companies into one under the name of the "*Southern Pacific Railroad Company.*" The route designated was from San Francisco southwards through the Santa Clara and Salinas Valleys, across the coast range of mountains into the San Joaquin, and up that valley, and over the Tehachapi Pass to the Colorado River. Its nominal capital was $30,000,000. Its actual capital the road from San Francisco to Gilroy, and its equipment, nothing more, and that mortgaged for $968,000.

Meantime the Central Pacific Company had constructed a branch of its road extending southwards from Stockton up the San Joaquin Valley, some 150 miles, to a place called Goshen, a mere hamlet—but the point at which the projected Southern Pacific road would intersect the Central. During the winter months succeeding the purchases above mentioned, the parties succeeded in procuring the insertion in the Act of Congress of March, 1871, of a land grant in favor of the Southern Pacific Railroad Company, and soon thereafter began to build from Goshen onwards towards the Colorado river and the State line.

There was no *bona fide* subscription to the stock of the Southern Pacific Railroad Company, nor any contribution of cash capital. The whole business was managed through the instrumentality of a construction company composed of the managers of the road itself, who were also the trustees and managers of the Central Pacific. This construction company contracted with the Southern Pacific Railroad Company to build and equip its road for all the stock of the company and all its bonds. The original intention was to issue $40,000 of stock and an equal amount of bonds for every mile of road built, but this excessive capitalization seems to have been afterwards reconsidered and made somewhat less.

They began building the S. P. road from Goshen, above named, southwards, in 1872, and in that year constructed, say, 21 miles. In 1873 they built about 20 more, and in 1874 some 34 additional, making 75 in all in that valley; during the same period they added some 81 miles to the length of the road from San Francisco to Gilroy. This was the situation at the commencement of 1875.

The Fraud.

In July, 1875, the Southern Pacific Railroad Company executed a mortgage for $46,000,000 to trustees, dated April 1st of that year, covering the whole of their road existing and contemplated (being, as described, 1150 miles in length, or at the rate of $40,000 per mile of road); a large amount of these bonds was issued to the construction company, and the problem before Mr. Huntington and his associates was to sell these bonds, and, until sales could be effected, to give them an apparent or prospective value, which might meantime render them available as collateral security.

People investing in railroad bonds naturally look at the earnings of the road, as a guide to estimate values; and as the San Joaquin Valley south of Goshen was then quite unsettled, and could furnish neither freight nor passengers to the new road, they determined to make a show of business over it by using the credit of the Central Pacific Company. For this purpose they made a lease dated September 1st, 1876, to the latter company of the branch of the Southern Pacific railroad extending from Goshen southward to the Colorado River, *constructed and to be constructed*, for six thousand dollars per annum, for every mile thereof built and ready for operation. The rent would thus increase by six thousand per annum with every additional mile of road built. *From this rent, however, the lessees were permitted to deduct $3,000 per mile per annum for operating expenses.* And, probably to divert the attention of the Central Pacific stockholders from the importance as well as the dishonesty of this lease, it was made terminable by a notice of sixty days, as if it were a mere temporary arrangement. The very circuitous mode here resorted to of reaching a rent of $3,000 per mile per annum naturally suggests a sinister design, and there was one quite in harmony with the whole knavish proceeding of which it formed a part. The object was to enable the Southern Pacific railroad to appear in the financial publications of the day as earning from this branch of its road, while yet unfinished and without a terminus at either end, $6,000 per mile per annum, and being operated at fifty per cent. of its gross earnings! Obviously, a road through a new country which, while yet in an unfinished condition—running, in fact, from no place to no place,—could make such a showing as that, had before it the brightest of prospects. The terms of this fraudulent lease, therefore, were arranged for the purpose of deceiving the public, by holding out false and delusive prospects of the earning capacity of the road, and thus rendering the disposal of the bonds more easy. The making of this lease and the particular form of reservation of rent in it were both parts of a dishonest contrivance to bolster up the credit of the Southern Pacific Railroad Company, at the expense of the Central, and to enable Messrs. Huntington and associates, while acting as directors and trustees of the latter company, to hypothecate and afterwards sell the bonds of the former. It need scarcely be said that this constituted a gross fraud on the Central Pacific Company and its stockholders, and that under our law, as under that of all civilized countries, the last-named company is entitled to recover from its dishonest trustees all gains and profits of every kind derived from it, and this without any participation in or allowance for their labor or risk in the venture.

The disgraceful history of this issue of bonds of the Southern Pacific R. R. Co. is not yet all told, nor the published evidence of the fraudulent design exhausted. They were inscribed on the stock list and offered on the New York exchange; bids, offers, washed sales and all means (even down to a fictitious sale of a lot of them under an execution) were resorted to to give them currency, but without success; the gudgeons of Wall Street refused to bite; and down to March, 1880, the bonds remained in the hands of the construction company, unsold and practically unsaleable.

About the period last mentioned, Messrs. Speyer & Co., a firm of bankers in New York, pointed out the weak spot in Mr. Huntington's case to him; *it consisted in the right to terminate the lease by sixty days' notice*, and they offered if that defect were remedied to their satisfaction to take up the loan and float the first ten million of the bonds at a price agreed on. They agreed to take two millions of them at ninety, and got an option of eight more. As if to emphasize the fraud on the Central Pacific Company, and illustrate it, if possible, more clearly, the bankers insisted on, and Messrs. Huntington & Co. consented to a modification of the lease to the Central Pacific Company, *whereby it was made to continue in force absolutely for five years, and thereafter, until the Southern Pacific should have extended its road so far as to connect directly by rail with the railroad system of the Atlantic side, not exceeding ten years in all.* This modification of the lease was made and executed early in 1880, and the preliminaries having all been arranged, and the comedy fully rehearsed, there appeared on the morning of March 9, 1880, and the three following days, in the "New York Tribune," an advertisement, announcing that subscriptions would be opened on the 11th of that month, and closed on the 12th, in *New York*, *Boston*, *Frankfort-on-Main*, *London*, *Amsterdam*, *and Berlin*, for ten million dollars of six per cent. first mortgage bonds of the Southern Pacific Railroad Company (describing them), offers to be

made to certain banking houses of those cities respectively. This advertisement was conspicuously displayed, and among the inducements offered were that the bonds " were secured by a first mortgage on the railroad and telegraph line, rolling stock, fixtures, land and franchises of the Southern Pacific Railroad of California." That the total length of the projected road was 1,150 miles (specifying how made up), "of which 712 miles were completed and in operation," divided into the Northern and Southern divisions, the former extending from San Francisco to Soledad, and from Carnardero to Tres Pinos, in all 161 miles, and the latter from Huron to Yuma (with a branch of the road from Los Angeles to Wilmington), in all 551 miles, and interesected at Goshen by the San Joaquin branch of the Central Pacific road. That the net earnings of the southern division (through rental to C. P. R. R. Co.),
were in 1878..$1,656,360 00
" " " 1,635,554 93
that the San Joaquin Valley Branch of the Central Pacific Railroad furnished the Southern Division with an outlet both to San Francisco and eastward over the main line of the Central Pacific Railroad, and that " in view of common interests the Central Pacific Rail- " road Company had taken a lease of the Southern Division of the " Southern Pacific Railroad of California, for a period of not less " than five years, from January, 1880, and by the terms of the lease if " a railroad is not completed in five years from that date, so that " there is a connection of the Southern Pacific Railroad of California " with the eastern system of railroads on what is known as the 32nd " parallel line, the lease shall be extended until such connection is " made; provided such extension does not exceed five years longer, or " ten years in all from January, 1880. That by the terms of the lease " the net rental agreed to be paid during the continuance of this lease " and any extention thereof shall be $250.00 per month, or $3,000.00 " per year per mile (being at present on about 551 miles, equals about " $1,650,000.00 annual rental), 'and if for any cause, it' shall be re- " duced by mutual consent of the parties, that the annual amount of " such rental reduced shall at least be sufficient to pay all the interest " that has been or may be agreed to be paid in any one year on any " bonds of the Southern Pacific Railroad Company of California, " outstanding during the continuance of this lease."

The modifications in the terms of the lease indicated in this advertisement seem to have been all that was required by the bankers, and promptly after the time for closing the bids, without waiting to hear from London, Frankfort-on-Main, Amsterdam or Berlin, it was announced that the whole block of bonds had been taken by Messrs. Speyer & Co., and thereafter they were gradually peddled out on the New York market and ultimately found buyers. The sales of these bonds thus introduced in the stock exchange by the credit of the Central Pacific Company aggregated over $32,000,000 and at an (estimated) average price of about 95 per cent. The sales from the land grant obtained by the building of the road have amounted to over ten million dollars, and much remains unsold. All these large sums should be accounted for to the Central Pacific Company as the fruits of the fraud. Thus the dishonest directors of the Central Pacific road procured the means for constructing the Southern Pacific, which by its shorter mileage between the oceans, its easier grades, and the preference given it in the routing of freight, has been almost the ruin of the Central Pacific. To ensure the disastrous result however, the managers determined to cut off its local freights also, and to this end constructed (in the names of companies ultimately consolidated with the Southern Pacific) a substantially parallel road through the San Joaquin Valley on each side of the Central, ready to intercept every pound of freight approaching it on either side!

Other Frauds in Central Pacific Management.

1. We have already mentioned the ninety-nine year lease of the Central Pacific road to the Southern Pacific Company (of Kentucky). Considering the relative positions of the several parties, the ownership by the lessees of the whole stock of the rival road and that of the Southern Pacific Company's stock by those managing the Central Pacific direction, it cannot be doubted that this lease would be pronounced by any court of equity a gross fraud on the Central Pacific Company. Its ruinous character is obvious.

We will not dwell on the diversion of traffic from the Central to the Southern route, though the loss of revenue by the former from that cause must have been enormous. Owning all the stock of the one road and having no interest in the other, while they managed both, it was perhaps but natural for such parties to favor their own road at the expense of the other. The power to do so was obviously a principal motive for the ninety-nine year lease, the terms of which, it may be remarked, left them at liberty to change the rent from time to time practically at discretion. To assert that they exercised with impartiality great powers so dishonestly obtained would be to invite derision, not belief. The Kentucky corporation as lessee of both roads did the carrying, issued the bills of lading, etc., so that unless the shipper took special pains (for which there was rarely a motive) to expressly direct his freight sent over the Central route, it was at the discretion of the carriers, and naturally went by the Southern. The arrangement of time schedules, greater promptness in delivering freight, adjusting reclamations, and like considerations, helped to determine the choice of shippers in the same direction. The revenues of the Central Pacific road rapidly fell off, and its dividends went down to three and two per cent., and finally to zero.

2. For many years after the completion of the Central Pacific road, its managers were the largest borrowers of money in the San Francisco market, and large borrowers wherever they could obtain it. Any person having a sum of any magnitude to loan could have from them the note or the endorsement of the Central Pacific Railroad Company. *None of this money was for the use of the Central Pacific Company, but for that of the managers;* yet the credit of the Central Pacific Company was strained to the utmost to procure it. An ordinary broker's commission on these loans of credit would amount to a large fortune.

It would be difficult to put a limit to the recovery which the Central Pacific Company is entitled to from its dishonest managers and its rivals for these frauds, which are probably but specimens, of which there are plenty more to be brought to light by a proper investigation. This seems to be the most appropriate place to account the latest chapter of Central Pacific history, which has indeed something of the grotesque about it.

IV. The appeal to Congress to refund the debt at a low interest is made on the suggestion of inability to pay. Hon. Grove L. Johnson, of the House of Representatives, published, during the recess of Congress, a long letter defending the pending measure, substantially on that ground. He thought that at any higher rate of interest than two per cent. the company could not pay the debt without rates of freight that would be ruinous to California shippers. He could not have been aware when he did this—in fact few would listen with patience to such an argument, if they were aware,—that *at the very time Mr. Huntington is posing the company before Congress in forma pauperis, he has been paying the stockholders dividends on their shares and is under promise to double the same as soon as the refunding bill has been passed.* The payment of this dividend has not had any publicity, has in fact been practically a secret, but it is the fact, and the history and proof of it are about as follows:

The Secret Dividends of 1895, 1896, and How Brought About.

It is known that the great bulk of the Central Pacific stock is held in England. It was sold to English purchasers between 1875 and 1890 by the device of paying large dividends on it while at the same time the sellers were building the Southern Pacific road to take away its business as above related. The Englishmen were deterred from transferring their shares to their own names by the artful suggestion of individual liability for corporate debts, and more especially for the Government subsidy bonds under California law. Their holdings were therefore represented by certificates in the names of former holders, endorsed in blank. To facilitate concealment of ownership a form of certificates was invented, with dividend coupons attached; so that the holder need not a receipt for his dividends or even present himself to get them. No one could know his identity except the banker with whom he deposited his coupons. These former holders were employees of the company to whom the managers had transferred their shares in lots of ten, twenty, thirty, fifty, one hundred, two hundred, three hundred, and five hundred shares, which, being endorsed, passed from hand to hand by delivery only. *Proxies for voting were taken in all cases from these employee-shareholders, which as the stock remained on the companies' books in their names have enabled the sellers ever since to elect the directors and control the management of the company.* Dividends paid under a former arrangement ceased some two years since, and after a period of waiting, the Englishmen became dissatisfied with the management, and after meetings and consultations despatched to this country Sir Rivers Wilson, to investigate, threaten, and get what he could for them from the directors of the company. Sir Rivers came to California, interviewed the officers of the company, made his examinations, etc., and was reported in the papers after his return to the East as having arrived at a compromise with Mr. Huntington, the President of the Southern Pacific Company After this settlement he was reported in the press as proceeding to Washington and there contributing his effort in favor of the refunding bill of last session. On his return to England, the results of his mission was communicated to his constituents, with the recommendation that they transfer their shares to their own names, and take the control of their own property. The substance of his negotiation soon became known on the London stock exchange, where the shares were dealt in, and the London "Economist," a financial journal of high standing, noticed the matter as one of public interest, in its issue of March 23rd, 1895, in the following terms:

From the " Economist" (London), March 23d, 1895, page 385.

The Position of the Central Pacific.—Some slight compensation it
“ appears Mr. C. P. Huntington is willing to make to the Central
“ Pacific shareholders, since he has stated through Sir Rivers Wilson
“ that he will undertake to pay one per cent. per annum in the shape
“ of dividends until ‘satisfactory legislation has been obtained for the
“ adjustment of the company's debt to the government,’ after which
“ rather vague date, two per cent. per annum is to be paid for the
“ period of two years, during which the shareholders will have time to
“ review their position, and to consider the advisability of endeavoring
“ to effect an arrangement or a more permanent and more profitable
“ character. Sir Rivers Wilson takes the same view of the position of
“ the company as that of the *Economist*, and indeed that of most of those
“ who have considered the facts. The Central Pacific is at present in
“ the grasp of the Southern Pacific, which is virtually Mr. Huntington
“ in what may be termed a corporate form; it would have remained a
“ profitable undertaking if the present lessees had not worked its ruin.
“ In the future probably it can be best worked in connection with the
“ Southern Pacific, provided equitable terms can be arranged; and
“ finally as there is nothing really to fear in the theoretical liability
“ on the shares, holders should at once without delay, register, so as to
“ make their voting power efficient. If that be done, and if terms can
“ be made with the government, English investors may ultimately
“ suffer less loss than once appeared probable. They will however,
“ have to be very careful in approaching Congress. They must re-
“ member that they have no claim to anything save that which is
“ given by the strict letter of the law. If they have been swindled by
“ the ‘bosses’ in control of the Company, which is often alleged, not
“ only have many others suffered in the same way, but few have been
“ guilty of so much contributory negligence. It has also to be remem-
“ qered that if the shareholders have not fared well, the United States
“ government made a bad bargain over the subsidy which it granted
“ to the Central and Union Pacific Companies. And, of course, it is
“ scarcely necessary to assert that the fact of the credit of the United
“ States having so greatly improved is no reason whatever why one of
“ its debtors whose credit has not improved, to put it mildly, should
“ get free from the obligation. As a matter of fact, the American
“ government, does not, we think, want to foreclose, for simply as a
“ question of expediency, that would be unadvisable, and therefore if
“ the Company sues, as it is bound to do *in forma pauperis*, Congress
“ will probably come to some fair arrangement despite the apparently
“ hostile position which it has recently assumed.”

Four weeks after the publication of this article, Mr. Huntington replied to it under his own signature, as follows:

Mr. Huntington's Reply.

From the "Economist" of April 20th, 1895, page 519.

“Mr. Huntington and the Central Pacific Railroad.—To the
“ Editor of the *Economist*; Sir:—Some one has sent me a clipping
“ from your issue of March 23d. The *Economist* has been sent to me
“ occasionally for years, and I have heretofore considered it one of the
“ best financial papers published in England. That being so I do not
“ think its editor would knowingly do any individual or corporation
“ wrong.

"I was the principal factor in building the Central Pacific road; "that is I organized the company, and sold all the securities, I believe "I intended to deal fairly with all people having dealings with the "company, and I believe I have done so.

"The Government, as you know, granted aid to two other lines— "the Northern Pacific and Atlantic and Pacific (Atchison Topeka and "Santa Fe)—which not only divided the tonnage, but cut down the "rates; and later other roads were built, so that there are now substantially, seven roads crossing the continent, when one double "track railroad could do all the business that is being done, and "much more, without any particular inconvenience.

"If any body has any charge to make of any particular thing that "I have done that was unfair, I would like to have him tell me what "it is. No one up to this time has told me, or intimated that there "was any particular charge, but in a general way, some of the California newspapers and some of the discharged *employees* have been "wildly throwing words into the air to the effect that something had "been done somewhere or at some time, but they do not state where or "how.

"The Central Pacific should have cost twice as much to build as any "other road did, as the physical obstructions to overcome were much "greater, and all the cost of construction, for grading, timber work, "such as the bridges, ties, etc.—in fact, everything that was furnished "in the building of the road, excepting rails, fastenings and rolling "stock, was paid for in gold in the sixties, when gold was at a high "premium. The coal we had to use as fuel, cost us for many years "an average of over eight dollars a ton, which is immensly more than "it cost the other aided roads, and still the Northern Pacific is in the "hands of a receiver, I believe for the second time, the Atchison "Topeka and Santa Fe (Atlantic and Pacific), is in the hands of receivers for the second time, and the Texas Pacific, I think, has been "in the hands of the receiver three times; whilst the Central and "Southern, I believe have paid all their debts, and I have no doubt "will be able to do so in the future, with the exception of the debt "owing to the Government, upon which it is hoped Congress will grant "an extension at a low rate of interest, such as the companies can "meet and still pay something to the shareholders.

"I am very truly yours,

"C. P. HUNTINGTON.

"NEW YORK, April 3rd, 1895."

Mr. Huntington, it will be seen, does not deny the correctness of the Economist's statement of the agreement, but pleads in confession and avoidance, that he was the chief factor in building the road and sold all its securities, and that he has not put it in the hands of a receiver, he adds that he has not been informed of any specific charges of misconduct against himself. This defense, so far as it goes, is partly true. Mr. Huntington has not put the road into the hands of a receiver, probably because he preferred to receive himself. But he does, by his eloquent silence, distinctly confess that to pacify the English stockholders, represented by Sir Rivers Wilson, he agreed with that gentleman that they should be paid in the shape of dividends on their stock one per cent. per annum until satisfactory legislation has been obtained for the adjustment of the company's debt to the government, "after which two per cent. per annum should be paid for two years more," to permit the shareholders to review their position and consider the advisability of endeavoring to effect an arrangement of a more permanent and profitable character. These statements can leave no doubt of the agreement with Sir Rivers Wilson, but they are at the moment of writing confirmed, if confirmation were needed, by an interview with Col. C. F. Crocker, Vice-President of the Southern Pacific Company, published in the San Francisco "Chronicle" of December 2nd, 1896, wherein he says: "The Central Pacific is not on velvet, but it is not in the depths of despair into which the Northern Pacific has fallen, *and the stockholders have been receiving a small dividend every year.*" The payment of this secret dividend is then established.

Amount of this Largess—By Whom Paid, and Why—Falsifying Annual Reports to Conceal It.

To pay a dividend of one per cent. on the stock of the Central Pacific Company requires $672,000 dollars, an amount too large to be overlooked by a slip in book-keeping, or to be easily concealed under some general head. And the question whence comes the money wherewith they are paid is not without importance; for these great railroad companies, whether we regard them as quasi-public corporations, or as organized solely for private gain, are certainly exercising great public franchises and trusts which affect large numbers of people. They publish annual reports of their dealings and business, on the truth of which millions of dollars are invested, frequently the funds of unprotected and helpless people, and even legislation is predicated. The publication of falsehood or the suppression of truth in such reports is, therefore, an offence against public morals of the gravest sort, which not even the most devoted partisan would venture to defend, or propose to condone. We have searched the annual reports of the Southern Pacific Company and of the Central, both those made under oath and laid before the State Railroad Commissioners, and those printed by themselves for public information, without being able to find one word on these dividends or any allusion to them; the inference seems inevitable of an intent to conceal them from Congress and the public. Surely the Congress of the United States will exact from applicants for its bounty, at least the homage of respect for truth, in the representations on which it is called on to act! The payment or amount of these dividends is not of so much importance as the duplicity and falsehood of the managers which it reveals. And the question comes right home to Mr. Huntington, personally, for the bargain was made with, and the promises made by him, and the reports from which it is suppressed bear his signature, and are distributed by himself and with his sanction. Failing to disclose the truth in a matter so material, their statements and those of their authors must be justly discredited in everything.

Denied authoritative information as to the motives for, or the source of this extraordinary dividend, which was paid to the stockholders without being earned by the company, declared by the board of directors or shown on the books of account, we are driven to conjecture; and the suggestion arises that they may be paid by one or more of the guilty directors or other persons interested in placating the dissatisfied stockholders and passing the refunding bill. This conjecture is not without probability, and if accepted, public opinion will not be apt to hesitate long as to the name of the distributor of such lavish largess or in conjecturing its motive. A settlement made with the United States, embodied in an Act of Congress, which at the same time condones so many and such monstrous frauds, ensures his Southern Pacific road for eighty-eight years to come against the competition of the Central Pacific road, and gives to his dishonest ninety-nine years lease the sanction of the law of the land, may well be worth double or treble the sum required to pay these dividends—say $4,032,000.

Another probable conjecture is that the arrangement is designed to permit the English stockholders to sell out their holdings and shift the loss on other victims, which perhaps two years' time with dividends meantime at two per cent. per annum, may enable them to do. Such a course may seem to them preferable to litigation with an adversary whom they have been led to believe the only man capable of handling the U. S. Congress, and who, if this measure passes, will readily be credited with like power to "handle" the President, and thus capable of calling down on them the thunders of Olympian Jove in the shape of an executive option to call in the debt the instant if they dare to attack the lease which has been their ruin.

In any case for Congress, in face of the revelations here made, to pass a refunding act based as all such propositions are, on the supposed inability of the company to pay its debt—without a previous clear explanation and understanding of this transaction, whether it represents dividends or hush-money, would be to put itself in the position of appearing as either the dupe of designing men or their instrument in deceiving others. Neither position very desirable, or consistent with its own honor and dignity.

Other Assets of the Central Pacific Company.

There are other assets of the Central Pacific Company which, though not of such magnitude as those mentioned, should not be lost sight of. Among these there is a mortgage made April, 1889, for $16,000,000 under which the latest report shows $12,283,000 bonds issued. This mortgage covers a variety of scattered properties, the most important being the land in Mission Bay, San Francisco (30 acres), granted by the Legislature in 1868, for terminal purposes, and since enlarged by the closing of streets to nearly fifty. The variety of properties included in the mortgage suggests the intent to cover everything the company had left not specifically and safely covered before. These bonds have never made their appearance on the stock-exchange nor been dealt in by the public. The fact that an action was commenced by the Attorney General to vacate the patent for the Mission Bay lands, soon after its issue, which has been pending ever since, would be quite sufficient to prevent their sale to real investors, and hence it is perfectly safe to assume that these $12,283,000 bonds are in the hands of the old directors, under the name of some one of their numerous companies. There is no probability that they could pass an investigation as to their origin or consideration (issued in all probability to themselves under the name of a construction company, in their usual way), and investigation should be made, that the terminal grounds may be preserved to the company for the uses designed, not converted to private uses for warehouse property on which it will hereafter have to pay rent to its former directors and their heirs and assigns forever.

Another item of much less amount than that last mentioned which might be profitably investigated, rather perhaps as illustrative of the methods of these people and the character of these annual reports on the presumption of the accuracy of which, Congress is asked to act, relates to one of the sinking funds of the Central Pacific Company, and the story as derived from the reports themselves is about as follows:

When Messrs. Huntington and associates commenced the railroad business, being somewhat inexperienced, they appointed trustees to manage their sinking funds, and for the Central Pacific Land-grant mortgage of 1870, two gentlemen were named of known responsibility and wealth. Probably requiring some little time to attend to their own affairs, and as the accounts of the land sales, bonds, redemptions, etc., were kept in the railroad company's office, and everything ran smoothly, they appear to have imitated the great Grecian poet, and to have *nodded*—just for a moment. During this moment of somnolence some one, more vigilant than they, got away with no less than $2,500,000 of the money belonging to the sinking fund! The trustees of course awoke in time, and there was probably a disturbance, or at least an *eclaircisement*. Of these particulars we are not informed, but the published reports disclose that a settlement was reached in pursuance of which the Central Pacific Company gave to the trustees of the Land-grant mortgage its five notes for five hundred thousand each, payable in one, two, three, four, and five years, with interest at four per cent. per annum, to supply the deficit. (Vid. Rep. of 1891, p. 100.) These notes were sacredly "pledged the redemption of the bonds," as the money they represent was pledged before it was eloigned; and as the bonds drew six per cent. interest, and the notes but four, the equitable consideration extended by the creditors to the gentlemen who had taken their money, and the profit made by the latter by the transaction, may be readily calculated. What is unexplained about the settlement is that the notes were executed by the Central Pacific Company, yet the next page informs us (and subsequent reports confirm the statement) that the interest on these notes is paid by the Southern Pacific Company! If the Central Pacific Company did not get the two and a half millions of principal taken, why did that company give its notes for the amount? And if it did get the principal, why does the Southern Pacific (which is not strictly a benevolent institution) pay the interest? These are *queries* which probably none but Mr. Huntington himself can answer. The facts indicate crookedness.

Other objections to the proposed extension of time which time forbids us to dwell on, are:

V. The fact that such course necessarily involves a prolongation of the life of the Central Pacific Railroad Company, which is a California corporation for many years beyond the legal term of its existence, without reasonable necessity for such action, and distinctly against the will and protest of the people of the State, from which it derives its life and being. We are not disputing the power of Congress for federal purposes to do such an act if in its judgment necessary, but without necessity it should not be done. Independent of the overriding of the authority of the State government over its own creature, such an act will create a body politic without any defined limitations on its corporate powers, or any law governing its methods of proceeding, its rights with regard to its shareholders or their liabilities, and the charter of which could not be forfeited by any court, State or Federal, no matter how gross its offences. No State court could interfere because the concern would be a Federal corporation; and no Federal court could act because the United States have no statute on the subject.

VI. This Central Pacific Company under its past and present management has come to be the most odious and detested corporation that has probably ever been known, and this "for reasons, capital, confessed and proved." It has invented and put in force more, and more different modes of vexations in transportation, than probably any other in the world, and *we* have always been the sufferers. At one time goods ordered from Eastern points for the interior of California or Nevada, on the line of the road, had to be hauled to San Francisco and back to destination, to swell the cost. By special favor and on payment of the whole freight both ways, the interior merchant might obtain permission to have his goods delivered as they passed his door. At another time they imposed a protective duty of a cent a pound on refined sugars coming here from the east, and, as believed, for a consideration of $100,000 paid by parties interested. The charge was publicly made* at the time by responsible parties and never denied. Silence under such circumstances amounted to an admission. At another they introduced here a system of special contracts to be enforced by boycotting,† which if long continued would infallibly have riven our community into two hostile factions. This infamous and doubtless illegal special contract system was broken up by the construction of competing roads, but by their system of leases they undoubtedly aim to revive it. By their omnibus lease and the lease of the Central Pacific road, they have united practically all the roads in the State under the management of a foreign corporation which in turn is under the control of a single individual, whose greed has no limits and who avows that he has no other or higher standard of right than his own opinion. He has never made public his general code of morals, if he has any, but in letters to his former associate he exhibits his ideas on procuring congressional legislation, to be in brief, to bribe those who will accept and vilify those who will not.

By this combination they, for years, simultaneously withheld payment of railroad taxes, unhinging the machinery of the State Government and throwing the public service out of gear. Public schools closed, supervisors, legislators and executive officers bribed, injunctions defied, and all this under the pretence of ascertaining the constitutionality of an enactment procured by themselves and passed for their benefit. When however the opportunity of a decision presented itself fleeing from the ordeal. A history of all these offences would unduly expand this memorial, and they must be passed over with mere mention. But the tax litigation was so grievous an injustice to the State, and the dishonorable and collusive manner in which it was managed are so susceptible of, record proof that we give it briefly, as follows:

Thirteen Years' Litigation over a Scheme of Taxation Enacted at their Own Suggestion and for their Benefit—Collusive Suit—Impositions Practiced on U. S. Courts—Etc.

In 1879 a provision was incorporated in our State constitution, excepting railroad mortgage bonds from the general rule for taxing moneys invested on mortgage. It was done at the instance of the railroad people themselves, to enable them to sell their Southern Pacific bonds, which, if subject to local taxation in California, would obviously have been impossible. The measure was introduced in the convention by Mr. Henry Edgerton, one of their standing counsel; stated by him to be satisfactory to his clients, and passed without amendment, *nem. con.* The taxes of 1880 having been levied under it, the companies refused to pay, and when suits were brought they removed them to the Federal court, claiming that the exception thus enacted at their own instance was in conflict with the 14th amendment of the United States Constitution. They affected a wish to waive all other controversy and try this constitutional question only. To secure control of the litigation, they procured a collusive suit to be brought by the Supervisors of San Mateo County (to whom they loaned the amount of the county taxes, on terms evidently corrupt on their face) in which the facts were admitted by demurrer, in a shape presenting apparently a case of hardship so great, as to lead the Circuit Court of the United States to decide in their favor. The false coloring given to the facts was then exposed in the press, and attracted the notice of the Judges of the Supreme Court, who when the case came before tham, declined to decide it in the shape presented, and desired the facts developed by a trial and proofs. Several other cases were then tried contradictorily and appealed, all of which were determined on other grounds, petty quibbles of a trifling character, and without touching the great Constitutional question which had been made the pretext for their removal from the speedier adjudication of the State Court. Finally years having gone by; and the Supreme Court having in the course of this experience become acquainted with the whole matter, intimated its readiness to decide the San Mateo County case, if the parties would resubmit it. But as may be seen from the opinions of the court below and the argument of Mr. Roscoe Conkling, on the appeal, their main reliance in the support of the constitutional objection was the extreme hardship of the case, as presented on demurrer, and that mask having been torn off by the development of the actual facts, a decision by the Supreme Court became the last thing the railroad people wanted. The adversary which had been so obliging as to commence and prosecute the suit with the money in its own treasury, *and lose it*, was equally obliging and compliant in the matter of the appeal; the San Mateo supervisors promptly telegraphed to Washington, a dismissal of the writ of error, which the Supreme Court allowed. Then the State itself brought a suit wherein this Constitutional question was presented alone. It also went to the U. S. Supreme Court on appeal; but again they frustrated a decision by paying the tax and penalties in full, just in time to oust the court of jurisdiction, by destroying the subject of controversy. There is no honesty or good faith in them. The controversy lasted in various forms from 1880 to 1893, when the Legislature after an appeal by joint resolution to the Supreme Court to advance the pending case, finally from mere weariness and despairing of a decision on the merits passed an act for re-assessing the roads. The railroad combination was stronger than the State; they now ask Congress to strengthen them still further by a congressional charter with undefined (and therefore unlimited) powers and by reserving its whole policy on Pacific roads for a century to come. See,

---

* See *The Nation* (N. Y.), December 8, 1881, pp. 452, 453.
† For details, see *The Nation* (N. Y.), August 11, 1884, pp. 113, 114.
See this pamphlet, pp. 25-29.

San Mateo County *vs.* Railroad Company, 8 Sawyer's C. C. Repts., 228.

San Mateo County *vs.* Railroad Company, 116 U. S. Rep., 136.

San Bernardino County *vs.* Railroad Company, 118 *id.*, 417.
Santa Clara County *vs.* Railroad Company, *id. ib.*, 394.
S. P. R. R. Company *vs.* California, *id. ib.*, 109.
Laws of California, 1893, pp. 290 and 618.
California *vs.* Railroad Company, 149 U. S. Rep., 308.
Railroad *vs.* California, 162 U. S. Rep., 91-167.
California *vs.* Railroad, 105 Cal., 576.

The detailed history of this episode is presented for the information of any interested in an appendix hereto.

Goaded by provocations such as those here adverted to,—and they are but specimen cases to which similar ones are of constant occurrence,—the people of California have long looked forward to the expiration of the charter of the Central Pacific road, for delivery from this body of iniquity, *at least for their children;* and on their behalf we respectfully and earnestly entreat Congress not to pass any act which will continue down to the coming generation any part of the offense, outrage and oppression which we have endured from this iniquitous combination now called the SOUTHERN PACIFIC COMPANY. Deprived of the management and power to continue to plunder the Central Pacific road, it can hardly fail to go to pieces and relax its grasp on the vitals of our State.

It may almost be said that all the known operations of the Pacific railroad management in this State are saturated with fraud and dishonesty which recur at every turn of their procedings.

Defrauding the Government and the Public by Failure to Build the Road Contracted for—The Contracts Entire.

Take for example the construction of the Southern Pacific road, of which we have spoken above. Its map, which preceded construction, showed a road from San Francisco southwards through the Santa Clara Valley, to a point where it was to commence the ascent of the pass over the Coast range after crossing, which chain of mountains it was to extend through the upper San Joaquin Valley, and so on to the State line on the Colorado River. To aid in the building of this road, they obtained a land grant of over ten million acres. The road was designed by congress to be a competing line to the Mississippi river and to connect the two richest valleys of the Pacific Coast, and its finest Sea port, by an independent and continuous line of rail with the waters of the gulf of Mexico. No object less important could justify the extravagant bounty of Congress, and evidently from the n ture of the object and the means adopted, *the contract was an entire one.* The whole road mentioned was to be built for the whole subsidy. Of the road to be furnished about a hundred to a hundred and fifty miles were devoted to crossing the pass in the coast range and thus connecting the two valleys and five hundred or so ran through them, over a soil as rich as possible and as level as the beds of the rivers that drained them. It was not for building through this valley country that Congress offered its bounty; that constituted no part of the inducement, for these very parties had already built a hundred and fifty miles of road up the San Joaquin, for the profit derived from building it at $26,000 a mile and bonding it for $40,000 and they were going further. The consideration for the land grant was the construction of the road over the mountain pass which was highly important from military as well as commercial considerations.

For this the bounty was offered and the difficult character of the work was its justification. What did these honest gentlemen do? They built the valley parts of the road on both sides of the pass, and drew and alienated the rich land fronting on it, leaving the connecting road from Tres Pinos to Alcalde (some 100 miles) unbuilt and it so remains to day. And this omission was no accident or afterthought, but intended from the first; Charles Crocker writes to Colton his partner, under date of February 12th, 1875 (Colton Transcript, p. 1621), and after referring to a suggestion of Colton's to "build 20 or 40 miles on the east side of the San Benito pass, and then go to Congress for a change of line," says: " We intend to build from Goshen to Los " Gatos close up to and into the eastern base of the mountain to a coal " mine there; *and we have never intended anything else* and no " portion of the old line will remain unbuilt, except that through the " mountains, about 50 miles," etc., (it is in fact 100 miles.) * * * * " I had supposed that that you fully understood this; *Huntington does understand it*."

This being so, on their own confession made as early as 1875, what sort of faith were they practising when they solicited and accepted from Congress a land grant of over ten million acres of rich valley land as the price of doing this work, which they confess they never intended to do? Is this the sort of good faith Mr. Huntington is using in treating with Congress to-day ? Are his present representations and promises to be measured by it ? It certainly appears to satisfy the standard of morals he proposes for his conduct in his sworn examination before the Senate committee shown in Senator Morgan's report, page 173.

Out of one wickedness proverbially springs another, and " bad begun makes strong itself by ill." This truth is illustrated in the present instance by an imposition on the financial public as wicked as that practiced on the Government. In building the Southern Pacific road mortgage preceded construction, as already shown, and the mortgage of 1875 covered as we have said the whole road in this State, existing and contemplated, from San Francisco to the Colorado river.

The route being afterwards opened for through traffic, the holders of Southern Pacific sixes of 1875 placidly repose in the belief that their bonds are a lien on the continuous traveled road, the " through line." This is a mere dream; their mortgage is on two distinct roads: the one from San Francisco to San Miguel, the other from Alcalde to Fort Yuma, and these are separated from one another by the mountain chain above mentioned, the pass over which rises to 1,934 feet above tide, to build over which will cost not less than six millions ! Without such connection the two separate roads are of but trifling value compared to the amount of the mortgage bonds, and the latter are a fraud on the public. There are about thirty-two millions of them outstanding!

In nearly similar plight are the bonds of the same concern last issued, called "First consolidated fives of 1893." That mortgage is a first lien on fragmentary roads leading practically from no place to no place, and useless without other roads which are otherwise mortgaged. These are practical examples of Mr. Huntington's moral standard.

Again; take the matter of terminals, one of extreme importance to every railroad, and specially so to one of considerable length. The State, twenty-eight years ago (1868) granted sixty acres in the city of San Francisco, to the two Pacific roads, for terminal purposes; and by the closing of streets this area has since been enlarged to a hundred acres. The only use to which in these twenty-eight years they have put these terminal grounds, is to mortgage them for $16,000,000. The real terminus in San Francisco is and has been for twenty years past, at the corner of Third and Townsend streets, on a block of ground 825 x 550 feet, *belonging to the Southern Pacific Company (of Kentucky).* The same concern owns the adjoining blocks used for the receipt and delivery of freight. Not a square foot is owned by either of the railroad companies that use it. No rent is found charged for these premises, in their reports or anything to indicate that they do not own the land, a fact the knowledge of which might alarm bond holders. But whenever the mortgagees foreclose and make title to the railroad entering San Francisco, the purchasers will succeed only to the right of way and track, along the public streets as far as the corner of Fourth and Townsend streets, where a gate on the line of the Southern Pacific Company's property will shut them out of the terminal grounds and compel them to discharge their freight and passengers on the public street, and then back the train a mile or two to the nearest turn-table to enable them to reverse the locomotive.

These are specimens of the way things are managed and financed by this concern, and the repeated occurrence of the like has caused those who know it best to doubt whether this Southern Pacific Company of Kentucky has ever been party to a single honest transaction.

The Central Pacific can be Reorganized on Safe and Solvent Bases, by Calling in the Sums Due it from Solvent Debtors.

The exigencies of space forbid further enlargement on this branch of the subject. Enough has been said to show the need of a thorough investigation of the relations of the Central Pacific Company to the parties who have so long held it in their grasp, and the enforcement of its just claims against them. This done it will be found that so far from being insolvent, the company can easily be reorganized as a great trunk line to the Pacific Coast, competing fairly with all others and on the basis of solvency and honest management, manifestly to the advantage of the government as a creditor and of its own stockholders. In any event the property, if it has to be sold, can be then offered with knowledge of what it consists of and what its earning capacity is—things at present absolutely unknown to any one but the Southern Pacific combination, who have for so many years past managed its affairs to its own destruction. It must not be forgotten to extend the payment or refund this debt as proposed is practically to sell the road to its present management on a credit of a hundred years, taking their promise to pay in small installments. Congress does not, nor does any of its members, or any executive officer of the United States, or indeed anybody, know what property you are selling. No inventory of it exists; and this ignorance *shuts off all competitive bidding.* It is now fairly established and undeniable that for numerous important purposes the Central route has decided advantages for through business over all others. All the products of this coast destined for Eastern points, valuable enough to pay for transportation by rail, give it the preference for climatic reasons. For passenger traffic which is 40 per cent. of the whole business,* it has the call over all the others—the Southern (Sunset) line is, in fact, discontinued during summer. It does not admit of doubt that each of the great trunk lines would be prompt to compete for the Central Pacific property, if offered at auction, *with inventory.* Without such it would not probably elicit any reasonable bids, for however large or valuable the property, no purchaser would be likely to count on receiving from the tenants, delivery of anything beyond the road itself, with a wretched skeleton equipment incapable of doing the business.

---

* The Central Pacific road used to furnish statements of details of through and local business, and of the amounts derived from freight, express, passengers and baggage, but since the year 1884 has withheld such information. From the printed report of December 31st, 1884, we learn that

The stockholders of the road, who appear to have at last awakened to the necessity of enquiry into the wrongs perpetrated by their agents the directors, are organizing in defence of their property, and if they have an opportunity, will scarcely permit the trunk lines to be the only competitors at such sale. As indicated by their published proceedings, they are making intelligent efforts to help themselves and resume control of their property; they will probably effect a reorganization of the company. The people of California, so far from offering factious opposition to a reorganization which shall preserve the central road as an independent and competing line of transportation, managed by its actual owners, as designed by Congress, will heartily welcome it.

We believe that all these desired ends can be obtained by means of a foreclosure of the Government lien on the road. For this purpose, as the property lies in several different States, complete jurisdiction should be conferred on some one of the Courts of the United States, and the ordinary powers of the Court enlarged so as to enable it to ascertain and redress, in the foreclosure suit, all frauds practised on the company or its shareholders by the management or by their tools or confederates, and the application of any moneys recovered from such parties to the sinking fund in the United States Treasury. We therefore respectfully pray Congress to instruct its appropriate committees to prepare and report a bill to that effect.

We here resume briefly the grounds of our opposition to the pending measure to refund the debt of the Central Pacific Railroad Company to the United States (Senate Bill No. 2894, H. of R. Bill No. 8189.)

1. The recognition and confirmation of the ninety-nine-year lease to the Southern Pacific Company, reverses the settled policy of the United States, with respect to these Pacific railroads, as established by previous acts of Congress, and promoted by grants of the public domain of many million acres. It substitutes consolidation and monopoly for competition and freedom of trade; it gives over the Central road to the management of its great competitor in business, depriving the people of the West of the advantages of competition in transportation for which they have paid these people liberally, and Congress has subsidized them munificently.

The proposal is quite new; has never been publicly discussed, advo-

---

the total earnings of the year were		$22,166,106.00
of which 74 per cent. was from local business	$16,216,902.00	
and 26 per cent. from through business or	5,949,204.00	
	$22,166,106.00	

Of the through earnings—

The receipts from passengers and baggage were	$2,383,066.00	or 40 per cent.
and from freight and express	3,566,096.00	or 60 per cent.

The local business shows the same proportions between freight and passengers.

cated or even mentioned. It is furtively introduced in the 9th and 19th sections of the pending bill under the disguise of an advantage to the United States! In fact, it can serve no purpose but to confirm the grasp of the Southern Pacific Company on the Central road, and enable it by routing freight to starve the Union Pacific into obedience to its commands.

2. The proposed guaranty of the Southern Pacific Company is worthless; a mere illusion. That company owns no property worth speaking of which is not already mortgaged for vastly beyond its cost or value.

The Southern Pacific Company is a fraudulent and predacious concern, got up to perpetuate the control of dishonest directors of the Central Pacific Railroad Company over the road after they had sold their interest in it, and of absorbing the profits of that and other companies by means of fraudulent leases. So plain was this at its origin that *its original charter from the State of Kentucky forbid it to build or operate railroads within that commonwealth.*

3. The relief asked for the Central Pacific road is based on false suggestions and concealment of material facts. So far from being unable to provide for the payment of its debt to the government, it is possessed of assets of enormous value—collectable claims against its former directors for moneys and credits misappropriated by them, amounting to many millions. These should be called in and applied to the sinking fund. Asking indulgence here on the ground of poverty, its stockholders are receiving dividends on their shares to-day, and have the promise of their lessee and advocate that they shall be doubled as soon as the bill passes. The secrecy of this dividend, the fact that it has not been earned by the road, declared by the directors, if such be the facts, and that it is not shown on the books of the company, so far from redeeming it from the imputation of fraud, renders it more conspicuously objectionable. If this be the case, it is evidently "hush money" paid by the guilty parties to secure Congressional confirmation of the ninety-nine-year lease; and the sum agreed to be paid for it[*] (which is essentially a bribe to silence opposition) bespeaks the nefariousness of the transaction and the value attached to a condonation of it.

4. By passing this bill, Congress will prolong the life of this railroad company for some seventy years beyond the limit fixed for sit existence by the law of the State that created it. To do this without the consent of against the unanimous protest of the State, would be not only an act of gross discourtesy to the State of California, but a grave injury and outrage to her people, who have for the past twenty-eight years suffered at the hands of these managers outrage and wrong past all endurance, rendering it justly odious and detested of all men.

5. The management of the road has been continuous from the beginning; they have shown themselves by their published correspondence among themselves to be corruptionists of the worst kind.

6. They have broken faith with Congress, by soliciting and accepting a land grant as the consideration for building the whole S. P. road a hundred or more miles of which was over a mountain pass. They

---

[*] One per cent. for 1895 (paid)	$ 672,000
Same for 1896 (paid)	672,000
Two per cent. each for 1897 and 1898	2,688,000
	$4,032,000

have taken and appropriated the valuable part of the grant, and left the difficult mountain part of the road unbuilt. Their correspondence shows the breach of faith was intended from the beginning.

7. They have broken faith with the public in the same way as with the Government; borrowed thirty-two million dollars on the undertaking to build a continuous line of rail from San Francisco to the Colorado river, and left a mountain gap of a hundred miles of it unbuilt, and have even renounced the building of it.

8. Similar frauds in the matter of terminals. They are unreliable.

9. Refunding the Central Pacific debt is wholly unnecessary. The company can be reorganized on the basis of solvency if Congress will but authorize a receiver appointed in foreclosure to avoid all fraudulent conveyances; get in the assets of the company and apply such as are not needed for transportation purposes to the sinking fund in the U. S. Treasury.

10. As seventy-five per cent. of the revenues of the Central Pacific road are derived from local traffic, and from fifteen to eighteen per cent. more from California products seeking a market abroad, and goods brought from abroad for consumption for sale here, on all of which we pay the freight, the people of California feel that all of the plunder which its former directors are permitted by Congress to retain will be saddled on them. There is little doubt that as much as from twenty-five to thirty millions can be recovered from the sinking fund from Huntington and the Crocker estate; why should they be abandoned without an effort and saddled on the people of this State?

San Francisco, Cal., December 26, 1896.

On behalf of the people of California.

CHAS. ASHTON,
JOSEPH BRITTON,
W. M. BUNKER,
J. H. BARRY,
E. S. BARNEY,
J. M. BASSETT,
T. V. CATOR,
N. P. COLE,
DR. FRANK CORNWALL,
W. M. COWARD,
H. Y. COWELL,
H. L. DODGE,
J. T. DOYLE,
HON. J. L. DAVIE,
B. F. DUNHAM,
L. R. ELLERT,
GEO. K. FITCH,
J. RICHARD FREUD,
GEO. T. GADEN,
ADAM GRANT,
H. E. HIGHTON,
N. C. HAWKS,
W. W. THOMPSON,
I. J. TRUMAN,
J. C. JENS,
WM. JOHNS,
J. C. JORDAN,
J. LEGGETT,
OSCAR LEWIS,
STEWART MENZIES,
C. A. MURDOCK,
M. McGLYNN,
P. R. MARTIN,
A. MILLER,
JAS. MADISON,
W. L. MERRY,
G. W. MONTIETH,
MAX. POPPER,
E. A. PHELPS,
TAYLOR ROGERS,
G. M. REYNOLDS,
C. A. SUMNER,
J. E. SCOTT,
C. M. SHORTRIDGE,
F. J. SULLIVAN,
L. STRAUSS,
I. UPHAM,
HON. ADOLPH SUTRO.

The Committee of Fifty appointed by the monster meeting at Metropolitan Temple, December 7th, 1895.

ADOLPH SUTRO, Mayor of San Francisco, *Chairman.*

TAYLOR ROGERS, *Secretary.*

SUB-COMMITTEE ON MEMORIAL.

JOHN A. STANLEY,
THOS. F. BARRY,
JAS. M. BASSETT,
JAS. D. PHELAN,
E. W. McKINSTRY,
TAYLOR ROGERS,
JOHN T. DOYLE, Chairman.

EXTRACTS FROM "THE NATION," REFERRED TO ABOVE.

(*The Nation, August* 11, 1881, *pp.* 113, 114.)

OVERLAND RAILROAD RATES.

To the Editor of The Nation:

Sir: Two paragraphs in the *Nation* of July 14 (No. 837, pp. 22, 23), indicate that you are but imperfectly informed as to abuses on the overland railroads. As you appear willing to aid in remedying them I give you some of the facts. The system of unlawful freight discriminations alluded to has not been recently revived; it has never for a moment been suspended since its formal introduction in the summer of 1878, but has been constantly enlarged and extended down to the present time, when it is more stringent and oppressive than ever before. The *modus operandi* is this: By arrangement between the Central and Union Pacific Railroad Companies the rates of Western-bound freights are fixed by the Union, and those of Eastern-bound by the Central Company. This arrangement is supposed to be nominal only; a sort of legal fiction to enable each concern to refer complaining parties to a "Mr. Jorkins," two thousand miles off; but that is the form of it. The Union Pacific Company has a printed classification of merchandise, and printed rates of freight for each class from New York and other Eastern points to San Francisco, ranging from $6 per 100 lbs. for first-class to $1.50 per 100 lbs. for Class D. These are declared to be the regular rates. But the Company enters into contracts with the merchants here to carry for them at *special* rates, much reduced from these regular ones, on condition that the merchant shall import all his goods by their line; not only such as are usually sent by rail or *via* the Isthmus, but also such as have heretofore, and naturally, come by sea around Cape Horn; and they make him bind himself to ship by their road, and by such connecting roads as their general freight-agent shall, from time to time, designate, all goods purchased by or for him, or shipped by or consigned to him, by his procurement, directly or indirectly, or with his knowledge and assent. The contracts declare that their object is to give to the Union Pacific Company the transportation of all goods *bought, sold, dealt in, or handled by* the merchant; and any act of his tending to defeat this object constitutes a breach, so that he cannot even buy in open market goods imported otherwise than by rail; and this rule is enforced. They also provide that these special rates are for his own exclusive benefit, and he must not allow the use of his nome or shipping marks by any one else. The freight must all be forwarded to Omaha by such carriers as are designated by the Union Pacific Railroad Company. They reserve the option (which is always exercised) of way-billing the goods and collecting freights according to the printed rates, agreeing to return the difference, on presentation of vouchers to the Central Pacific freight-agent at San Francisco, after the lapse of a reasonable time—say thirty days—for transmission, verification, etc.

All our leading merchants have been forced to enter into contracts of this description; the man who attempts to import his coarse goods by sea, relying on the rail for such as need more rapid transportation, has to pay such rates on the latter that he cannot compete with his neighbors. He cannot even buy his coarse goods in open market here if they shall have come round the Horn, for that would defeat the "*bought, sold, dealt in, or handled by*" clause. Such goods and their importers are tabooed and "boycotted," and the merchant who touches them without leave of the railroad company can have no freight transported overland except at ruinous rates; even at such he is liable to casual delays, difficulties, and obstructions which, being unable to account for, his unregenerate nature attributes to malicious design.

The result is that ships obtain little or no freights from Eastern ports here; they have to come here in ballast, or half full, to load wheat for Europe, and our people are compelled to pay on their produce sent abroad a freight to cover the expense of the round trip. The standing forced loan exacted from our merchants, without interest, by collecting and after thirty days repaying the difference between printed and contract rates, may amount to half a million dollars; it operates oppressively to individuals, but to the community is of minor importance. But the tax levied on our exports in the form of enhanced freights to Europe is a monstrous and shocking wrong. In the absence of full statistics it is impossible to compute its amount, but it is probably equivalent to about four dollars per ton on the exportable crop of the State. San Francisco, under this nefarious system, has degenerated from the rank and position of a maritime city open to the commerce of the world to that of an interior town some two thousand miles west of St. Louis, approachable only over deserts and mountains.

With these facts before you, which are known to every well-informed man in San Francisco (except, of course, the Railroad Commissioners), you can understand why the tide of prosperity which has spread over the rest of the Union during the last few years has never yet reached California, why all business has been depressed and real estate has been steadily falling in value ever since the overland roailroad was completed. Perhaps, too, you will regard with more leniency the mistaken hostility to corporations (especially railroads) which has found expression in some of our recent legislation. Grant that it is unphilosophical, ill-directed, stupid, and in some respects unjust—that was not its intention; but people who have been so long and sorely oppressed as ours have been by the present monopoly cannot always reason cooly or justly as to the remedy, and in their anger seize any weapon at hand careless whom else they may hurt, provided they can inflict a blow on their chief enemy.

You suggest an appeal to the courts—at least, so I understand your words "proceed against with all vigor;" but who can proceed against them, and how? I defy any lawyer to point out a remedy, under existing laws, of the slightest value to the individual aggrieved. Our Railroad Commissioners, if so disposed, could doubtless do much on behalf of the public, if not to break up, at least to expose the wrong. But the eyes of justice, you know, are bandaged, and they can only know what is officially communicated to them and duly proved by witnesses, and their governing majority has just completed a set of rules for proceedings before them well calculated to aid them in remaining ignorant of all public abuses of the kind. No individual merchant dare sue, complain, or even let it be known that he is dissatisfied, lest he should be straightway put at a ruinous disadvantage with his competitors in trade. His business would be broken up before he could get his first case set for trial, and his family might starve while he was awaiting the result of new trials and appeals. The way of a man who enters into litigation with a company that keeps all the leading law-firms under standing retainers, most of the leading journals by some means quieted, and which finds in legislators, railroad commissioners, and auditors of railroad accounts its serviceable friends, is too hard to be voluntarily pursued by any man in business.

There is but one remedy for this monster grievance which oppresses the whole Pacific Coast. The power so to oppose must be absolutely taken from the companies. For this purpose it is not necessary to establish rates of freight by law; but the law should lay down a rule for their establishment by the companies, and, once established, they should be made public, and no deviation permitted. The organization of the roads in all their departments should be kept under constant and vigilant supervision by government, and any violation of law by railroad officials should be punished as a public offence. Actions for damages and like private remedies are wholly inefficient. Congress has ample power to remedy all evils in the overland system of transportation, for it is all built on Congressional legislation; and its just control of that system, judiciously exercised, could not fail to be attended with most beneficial results in the whole system of connecting roads.

The first thing needed is a Congressional committee of investigation, with ample powers and means to examine thoroughly into all existing abuses in the management of the Union and Central Pacific roads, and their leased and associated lines. The *Nation* cannot do a better public service than by aiding and enforcing through its columns the demand for such an investigation.

San Francisco, July 28, 1881. John T. Doyle.

(*The Nation, December* 8, 1881.)

OVERLAND RAILROAD RATES.

To the Editor of the Nation:

Sir: Since the publication of my letter on overland railroad rates in the *Nation* of August 11, Mr. Charles F. Adams, Jr., has called my attention to the origin of the system of special freight contracts and unlawful discrimination in freight charges, as set forth in the report of the Government Directors of the Union Pacific Railroad for the year ending June 30, 1878. I quote from page 15 of the document:

> "In the month of July last, a sudden announcement was made that the tariffs on through-freighting business over the Pacific roads had been altered, and that, while the classification of certain articles had been changed, the rates upon others had been advanced from 50 to 100 per cent. The reason of this movement, which naturally excited surprise as well as indignation among those affected by it, was not at first apparent. It was, however, soon learned. It was purely strategic. The company did not really propose to raise its tariff rates; on the contrary, it was ready to slightly reduce them; but it did propose to take full advantage of its position to secure as much as possible of the transcontinental business. As a first step toward this, it practically did away with its open tariff, by the very simple process referred to. Under the open tariff, at the old rates, the larger business firms dealing between the two coasts had a choice of routes—that by water and that by rail. They, in practice, availed themselves of this option by sending their coarser freights, or those in regard to which time in delivery was immaterial, by water, at the lower rates; while the more costly wares, or those requiring immediate delivery, were forwarded overland. The object of the Union Pacific was to put a stop to this practice. This they did by largely raising their freights, which put an effectual stop to shipments under the open tariff, while, at the same time, they offered to all the large firms which would contract to make their shipments wholly by land, special rates at a reduction even

from those in force before the change. It was thus a distinct step backward; for it amounted to the abondonment of a published and open tariff in favor of a system of private special contracts.

"This move was, therefore, not only one of great importance, but it was open to serious objections. It was made, not by a petty local road, nor by a competing trunk line, but by a great, subsidized, continental thoroughfare. As such, it might naturally be inferred that it was made only after ample consideration, and with the authority of the full board of directors. It is, however, a fact singularly illustrative of the absence of that sence of public responsibility in which the policy of the Union Pacific is now shaped, that this measure, which practically put in irons the transcontinental business of the country, was devised by two freight agents, was never, before being publicly announced, submitted for consideration even to the executive committee of the board of directors, much less to the full board, and was finally put in force, to the utter surprise of the public, on the verbal authority, so far as can be ascertained, of the president and a single director.

"It is unnecessary to comment on such a method of corporate management. It speaks for itself. Meanwhile, so far as the measure is concerned, the objections to it are apparent. The through-business over the Union Pacific is mainly done by large houses. This is natural enough, for such houses can, of course, do it most cheaply. The measure under discussion, however, made it impossible that this business should be done by any but the large houses. They have special contracts covering it at less than the published tariff rates. More than this, it locks up, in secrecy, transactions which more than all others should be public. The special contracts may be equal as between shippers, or they may not. The directors have every reason to believe that they are, but they none the less are lacking in that element of publicity which in such matters will always remain the one real safeguard against discrimination."

The contracts here referred to and so justly condemned did not contain the "boycotting" clause quoted in my former letter; they merely bound the merchant to transport all his freight by rail—viz: "all goods purchased by or for, and shipped or consigned to him by his procurement, directly or indirectly, or with his previous knowledge or consent;" he was still free to deal in goods which had reached here by sea, though he could not import them so himself. Next year or the year following, the "bought, sold, dealt in, or handled by" clause was introduced, which "boycotted" all goods not imported by rail, so far as the railroad companies' customers were concerned. *They were forbidden to buy, sell, deal in, or handle them.* Last January the railroad companies gave another turn to the screw, and introduced a clause which boycotts not only the goods, but the importers. The merchant who holds a freight contract with this company is "*firmly bound*" *not to sell or deliver goods to anyone who is in the habit of importing otherwise than by rail.* To show that there is no mistake about this humilating exaction, I enclose on a separate slip the text of the covenant, as well as that of the corresponding clause in the contracts of the preceding year. They are clipped from the columns of the *Grocer and Country Merchant*, a local trade journal which published them, with a vigorous protest, at the time they were forced upon our merchants. The space of the *Nation* is too valuable to insert them *in extenso* here; but let them go into your advertising columns with a note of reference. They divide the importing merchants of the whole Pacific Coast into two classes—viz.: those who bind themselves to import exclusively by rail and those who refuse to do so; *these two classes are forbidden by the railroad company to have any dealings with one another.*

I make no comment on this proceeding, for I have no language equal to it; but I hope that the *Nation* will do so, for I have reason to believe that it will not be without effect. I pass to another item of railroad management.

Sugar refining was introduced here in 1855, and soon grew to be a large and important industry. Even paying duty on raw stocks imported from Manila, it was found possible to manufacture here at a profit, and compete with Eastern goods to the extent of the refined sugars and syrups consumed on this coast. The price was, of course, regulated by the cost of laying down New York sugars here. The Hawaiian treaty removed the duty from our raw stocks, and gave our refiners a clear advantage of two and a half cents per pound over their Eastern rivals. Still, Eastern crushed sugar had a slight preference, and could always be found in our market and at substantially the same price as domestic. Last January all this suddenly changed, and Eastern sugars disappeared from the market. The reason assigned was that the railroad companies had raised the freight on refined sugar from one cent per pound to two—a rate which forbade importations. The reader may be surprised that they should thus impose a protective duty (for that is evidently what it is) so high as to cut off their own revenue from the trade; but, though strong protectionists, they are not such fools as that. It now comes out that they received a full consideration for their action. The *Chronicle* of this city has brought out the fact, and it is uncontradicted, that the advance in freight is the result of a bargain with the principal refiner here, thinly disguised under the form of a transportation contract,* whereby, for a consideration of $100,000, they consent to impose this prohibitory duty on Eastern sugars for the current year. The *Chronicle* publishes statistics of sugar imported from the islands, etc., to show that through the operation of the treaty the Government loses about two million dollars per annum, while by the action of the railroad companies the people of this coast are mulcted about eight hundred thousand more in the enhanced cost of sugar. Its attack is mainly on the treaty and the refiner. Papers in the opposite interest defend the action of the railroad companies by the usual protectionist arguments, encouragement of home industry, etc. The whole public is, however, as it seems to me, more interested in a question back of this, and which I venture to think lies at the bottom of the whole railroad problem—viz: *What right has any railroad company to impose a protective duty on sugar or any other commodity imported from one State into another?* And what is the system of classification adopted by all our railroad companies as the basis of freight charges, but a system of protective duties under another name? The overland companies, by their scandalous imposition of this duty on sugar, have brought this question squarely to the front, and incidentally suggested the true remedy for such abuses. The latter, if you will permit, I should like to discuss hereafter.

JOHN T. DOYLE.

SAN FRANCISCO, November 23d, 1881.

---

*The transaction is alleged to be in the shape of a contract to transport for the refiner 5,000,000 lbs. of sugar at two cents per lb. Of course they could not charge any dealer a less rate than that voluntarily paid by so large a customer, who pays his freight and is not at all particular as to the transportation of the goods!